

World Payments Report 2015



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Preface

The growth narrative for non-cash payments continues as global non-cash transaction volume reached 358 billion in 2013 (latest year for which official market data is available), an increase of 7.6% over 2012. Both mature and emerging markets experienced volume growth, the latter steadily increasing their market share.

The volume growth is expected to continue into 2014; global non-cash volume is forecast to reach 389.7 billion, with China moving into fourth position globally behind the U.S., Eurozone, and Brazil. We predict the growth rate in 2014 will be 8.9%, driven by economic recovery in the U.S., and growth in Emerging Asia. At the same time, the industry needs to address the significant, and growing, hidden payments market.

In this year's World Payments Report (WPR), a joint venture between Capgemini and The Royal Bank of Scotland plc (RBS), we have placed a particular focus on the fast-developing global immediate payments landscape. The infrastructures to support these schemes are expected to have a significant impact on the customer offerings and business models of banks and non-banks. The innovation based on immediate payments is due in large part to customer (both retail and corporate) demands. Customers expect the ease of use and immediacy they experience with the internet. Delivering this in the payments world requires the transformation of processing, which in turn can facilitate innovation. Offerings based upon immediate payments systems and new technologies such as blockchain will increasingly be the route via which customer demands are met.

We not only track transaction volumes in the global non-cash payments market, but also closely examine key regulatory and industry initiatives (KRIIs) that have an impact on non-cash payments. Some KRIIs are especially high on agenda for industry participants at present: the Payment Services Directive (PSD II) in Europe, the migration to EMV standards in the U.S., the imminent establishment of the Payment Systems Regulator (PSR) in the U.K., and across the globe immediate payments and intraday liquidity. Regulators are increasingly turning their attention to immediate payments, not only facilitating such schemes but also creating a level playing field for banks and non-banks alike. The intention is to foster competition and innovation in the industry.

Standardization and innovation continue to be key objectives underpinning KRIIs, as is competition by opening up the payments market to new entrants. The trend of regional KRIIs cascading to become global in scope has continued and all market participants, including clients, would benefit from greater harmonization of the timing and content of the regulatory agenda across regions.

We hope that readers will continue to find the analysis and insights in World Payments Report useful and a key tool in strategic planning for the evolving payments landscape.



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World Non-Cash Markets and Trends

Key Findings

- **Global non-cash transaction volumes reached 357.9 billion in 2013, with the growth rate stabilizing at 7.6% in 2013 from 7.5% in 2012.** The growth rate in mature markets (North America, Europe, and Mature Asia-Pacific [APAC]) accelerated in 2013, supported by an uptick in growth across all payment instruments except checks. Developing markets are steadily increasing their share of the non-cash payments market. However, North America, Europe, and Mature Asia-Pacific still account for almost three quarters of the market.
- **Growth rates in transactions made using direct debits and credit transfers accelerated in 2013, while growth either fell or remained stable for other instruments.** Although the overall growth rate of cards declined compared to previous years (11.0% in 2013 vs. 12.1% in 2012), it remains by far the highest among key payment modes. Direct debit payments volumes grew 6.7% in 2013 compared with 3.9% in 2012, with Europe still accounting for more than 50% of global direct debit volumes. Credit transfer payments volumes are expected to grow, due to the proliferation of immediate payments solutions. The decline of the use of checks is expected to accelerate in countries such as the U.S. and France (where check-based transactions constitute 13.3% and 13.7% respectively of overall non-cash volumes) as consumers increasingly opt for e- and m-payments.
- **Global non-cash volumes are expected to reach 389.7 billion in 2014, with China moving into fourth position globally behind the U.S., Eurozone, and Brazil.** Fostered by the economic recovery in the U.S., and robust non-cash payments growth in Emerging Asia, global non-cash transaction volumes are expected to have accelerated by 8.9% in 2014.
- **Effective collaboration between government agencies, banks, telecommunications companies, payment services providers (PSPs), and infrastructure providers has created a strong payment services ecosystem in Singapore.** There is a high usage of prepaid instruments and a ready infrastructure for immediate payments.
- **Hidden transaction volume could be as big as 10% of the total estimated non-cash transactions for 2014.** The size of the global hidden payments market and its anticipated growth puts it on the radar of regulators and all other stakeholders. Any future payments strategy, be it client, regulatory or product related, will need to take the hidden payments market into account.



Non-Cash Transactions Growth in Mature Markets Accelerates, while Emerging Asia Grows at the Fastest Rate

GLOBAL NON-CASH TRANSACTION VOLUMES REACH 357.9 BILLION

Global non-cash transaction volumes reached 357.9 billion in 2013, an overall growth rate of 7.6% (see Figure 1.1). The global growth rate in 2012 was 7.5%. The fastest rate of growth—21.6%—was recorded in Emerging Asia¹ led by China, which grew at a record 37.7%. Central Europe, Middle East and Africa (CEMEA)² recorded growth of 10.6%, with economic downturns and political instability slowing growth. Volumes in Latin America³ grew by 8.6%. In the mature markets,⁴ non-cash transactions in Europe and North America outperformed GDP growth at 5.1% and 4.6% respectively. In mature APAC volumes rose 11.5%.

In North America, the U.S. grew at a faster pace of 4.7% in 2012–2013, compared with 3.3% in 2011–12. Since the 2008 banking crisis and economic downturn, the U.S. market has transformed from a predominantly credit card-based non-cash market into a debit card market. This reflects the overall decrease in consumer credit and a change in purchasing habits. Most European countries witnessed accelerated growth rates. Transaction growth rates increased across Europe, with faster growth in Germany, the Netherlands, Belgium, and the U.K., contributing to an increase of 5.1% in 2012–13 for the region, compared to 3.6% growth in the previous 12-month period. A combination of revitalized GDP growth and innovations in payments services contributed to an acceleration of non-cash payments growth in the U.K. However, in some markets such as France, growth of non-cash transaction volumes decelerated due to economic stagnation and high unemployment.

An economic slowdown in Argentina and a decrease in non-cash payments growth in Mexico contributed to a decline in the growth of non-cash transactions in Latin America, from 11.0% in 2011–12 to 8.6% in 2012–13. While reduced, this growth rate remains higher than any of the mature markets. Hidden, or shadow transactions, are also growing in Latin American economies with prepaid and mobile payment schemes offered by telecommunications companies becoming popular. CEMEA also experienced a decline in growth rates from 23.9% in 2011–12 to 10.6% in 2012–13, mainly due to geopolitical tension in the Middle East and economic stagnation in Eastern Europe. A marginal decline in growth rates was also experienced in Emerging Asia (22.8% in 2011–12 versus 21.6% in 2012–13), as growth decelerated in some South East Asian countries, such as Indonesia and Thailand. In both countries a preference for cash and the increasing popularity of non-traditional payments providers, such as telecom companies, contributed to the deceleration.

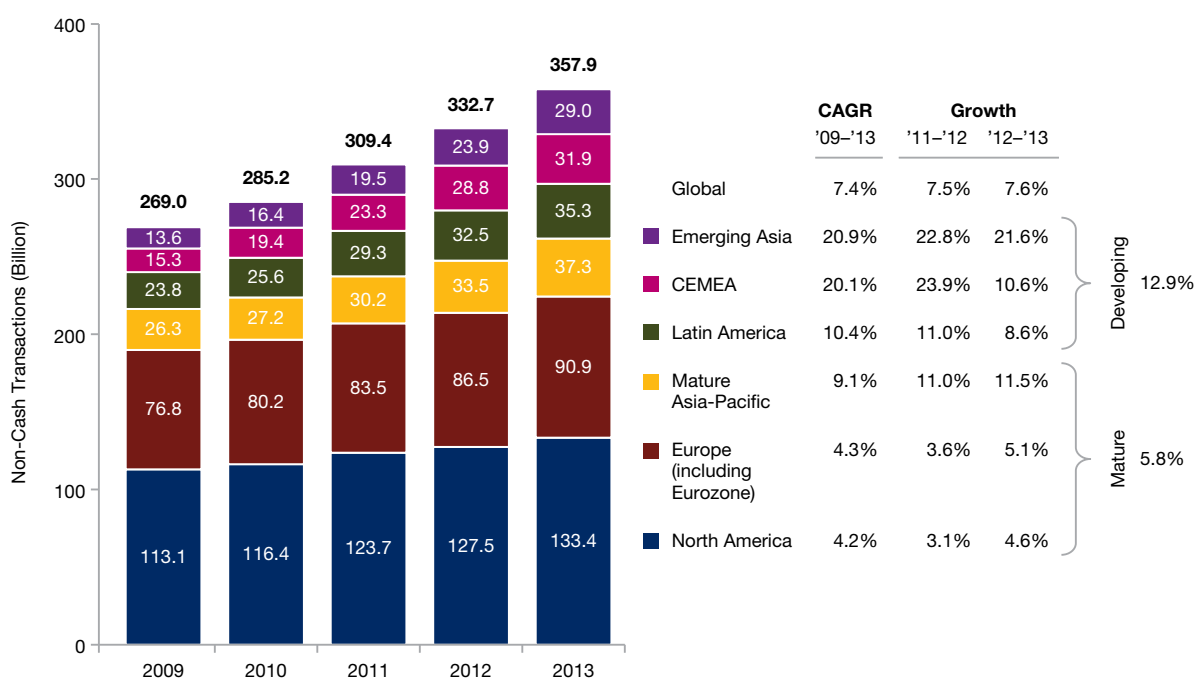
1 Emerging Asia includes India and China as well as Hong Kong and other Asian countries

2 CEMEA includes Russia, Poland, Ukraine, Hungary, Romania, Czech Republic, Turkey, South Africa, Saudi Arabia, and other Central European and Middle Eastern Markets

3 Latin America includes Brazil, Mexico, and other Latin American countries

4 Mature markets are: Mature APAC including Australia, Japan, Singapore, and South Korea; Europe, including Eurozone; and North America (the U.S. and Canada)

Figure 1.1 Number of Non-Cash Transactions (Billion), by Region, 2009–2013



Note: Refer to Methodology section for details on countries included in each region; Chart numbers and quoted percentages may not add up due to rounding; Some numbers may differ from data published in WPR 2014 due to previous year data updated at the source

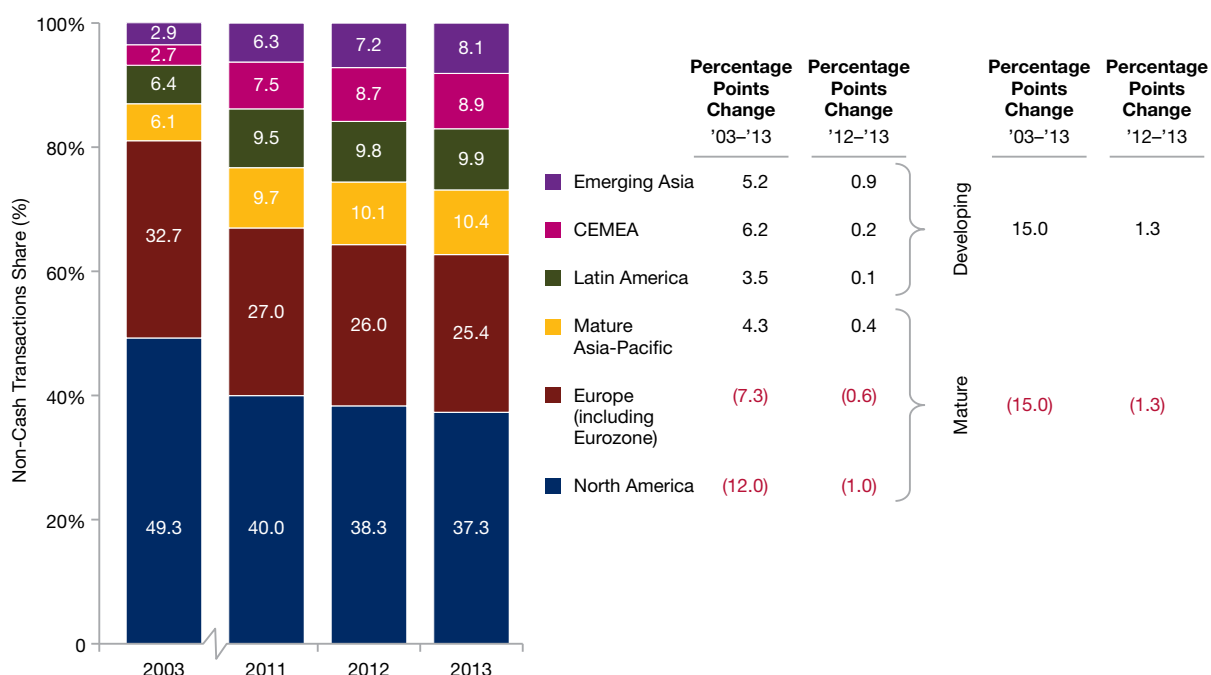
Source: Capgemini Financial Services Analysis, 2015; ECB Statistical Data Warehouse, 2013 figures released September 2014; Bank for International Settlements Red Book, 2013 figures released December 2014; Country's Central Bank Annual Reports, 2013

Between 2003–2013, mature markets dominated non-cash transaction volumes with almost three quarters of the market share (see Figure 1.2). However, a shift in balance is occurring as the developing markets’ share of global non-cash transaction volumes increased by 15 percentage points from 12% to 27%. Of these markets, Latin America’s share of non-cash transaction volumes grew 3.5 percentage points to 9.9%, while CEMEA recorded growth of 6.2 percentage points to claim a market share of 8.9%. Emerging Asia grew by

5.2 percentage points to reach 8.1% of global volumes. The growth in the developing markets has been driven by many factors including high GDP growth rates and economic development, improvements in payments infrastructures, and increased use of internet and mobile services.

If current trends continue, developing markets’ share of global non-cash transaction volumes is expected to increase from 27% in 2013 to 33% by 2020.⁵

Figure 1.2 Global Market Share (%), by Region, 2003, 2011–2013



Note: Refer to Methodology section for details on countries included in each region; Chart numbers and quoted percentages may not add up due to rounding; Some numbers may differ from data published in WPR 2014 due to previous year data updated at the source

Source: Capgemini Financial Services Analysis, 2015; ECB Statistical Data Warehouse, 2013 figures released September 2014; Bank for International Settlements Red Book, 2013 figures released December 2014; Country’s Central Bank Annual Reports, 2013

5 We have assumed that mature markets’ share of global non-cash transaction volumes will continue to decline at the 2003–2013 CAGR rate until 2020

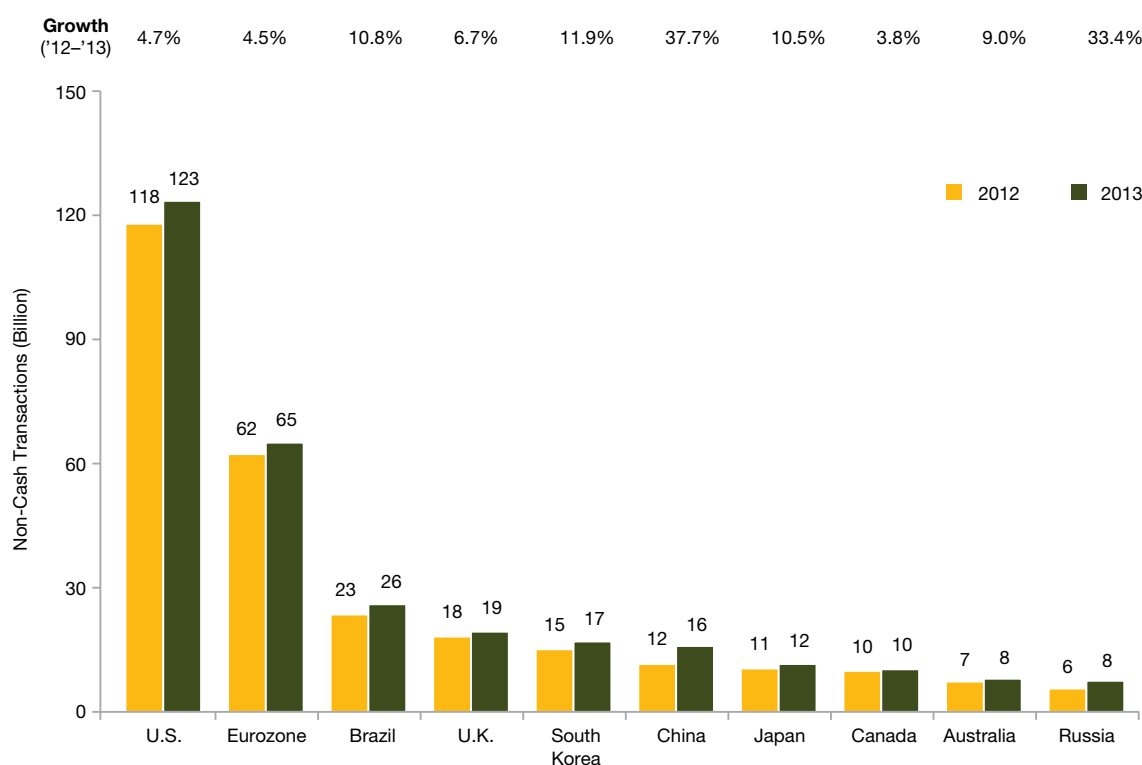
Among the top ten non-cash markets, China and Russia experienced remarkable growth rates of 37.7% and 33.4% respectively, during 2012–13 (see Figure 1.3).

In China, which recorded a total of 15.9 billion non-cash transactions, the rising penetration of mobile phones in smaller towns and cities is resulting in increased mobile payments.⁶ Steps taken by regulatory authorities in China to accelerate the deployment of point-of-sale (POS) equipment to merchants and to open the domestic payments card market to competition have increased volumes of non-cash transactions in the country. Transaction volumes of mobile payments in China grew by 170% in 2014 to reach a total of 4.5 billion.⁷ On Alipay, China's online payment service, mobile payments accounted for 54% of transactions for the first 10 months of 2014, compared to 22% in 2013.⁸ Russia's financial authorities have opened the banking industry to

private investors, which has resulted in numerous initiatives, including an increase in POS terminals, expanding internet penetration, and improving financial literacy. Russia's growth rate is, however, from a relatively low base of 5.6 billion non-cash transactions for the period.⁹

On an individual consumer basis, Finland again led the way in terms of the number of non-cash transactions per inhabitant (see Figure 1.4). Growth declined slightly in 2013, but the country's inhabitants made an average of 451 transactions each in that year. The Finnish example illustrates the forces behind payments growth: collaborative innovation on the one hand, and GDP growth and private spending on the other. However, during 2013 Finnish GDP contracted by 1.2%, leading to stagnation in the growth of transactions per inhabitants. Following Finland was the U.S., where inhabitants made an average of 390 non-cash transactions each in 2013. South Korea is reaping the

Figure 1.3 Number of Non-Cash Transactions in the Top 10 Markets (Billion), 2012–2013



Note: Direct debit data for China has been estimated for 2012 and 2013; Credit card data for Japan has been estimated for 2013; Direct debit data for Japan is not available for all years; Some numbers may differ from data published in WPR 2014 due to previous year data updated at the source

Source: Capgemini Financial Services Analysis, 2015; ECB Statistical Data Warehouse, 2013 figures released September 2014; Bank for International Settlements Red Book, 2013 figures released December 2014; Country's Central Bank Annual Reports, 2013

6 "What's So Different About China's Mobile Payments' Ecosystem", http://www.pymnts.com/in-depth/2015/whats-driving-chinas-mobile-pay-ecosystem/#VcWJp_lVhBc, 15 January, 2015

7 "China Mobile Payment Market Insights in 2014", <http://www.chinainternetwatch.com/12815/mobile-payment-2014/>, 25 March, 2015

8 "China's poorer, remote provinces are taking the lead on mobile payments", <http://qz.com/307993/chinas-poorer-remote-provinces-are-taking-the-lead-on-mobile-payments/>, 8 December, 2014

9 "Viewpoint: Prepaid Cleared for Takeoff in Russia", <http://paybefore.com/op-ed/viewpoint-prepaid-taking-off-in-russia/>, 3 April, 2014

benefits of payments innovation and experienced growth of 11% to reach 338 non-cash transactions per inhabitant.

Germany emerged at the forefront of business to consumer (B2C) e-commerce sales in Europe during 2013, with the largest number of customers using mobile devices to access retail sites. Non-cash transactions grew 9.5% to 19.9 billion during the year, and an average of 247 transactions was made per inhabitant. Cultural habits in Germany mean the country still has high levels of cash usage; hence the growth potential of non-cash transactions is high. In the U.K., non-cash volumes were slightly lower, at 19.3 billion; however, the number of transactions per inhabitant was higher at 302. Retail spending using credit and debit cards in the U.K. during 2013 contributed to the overall growth rate of non-cash transactions of 6.7%.

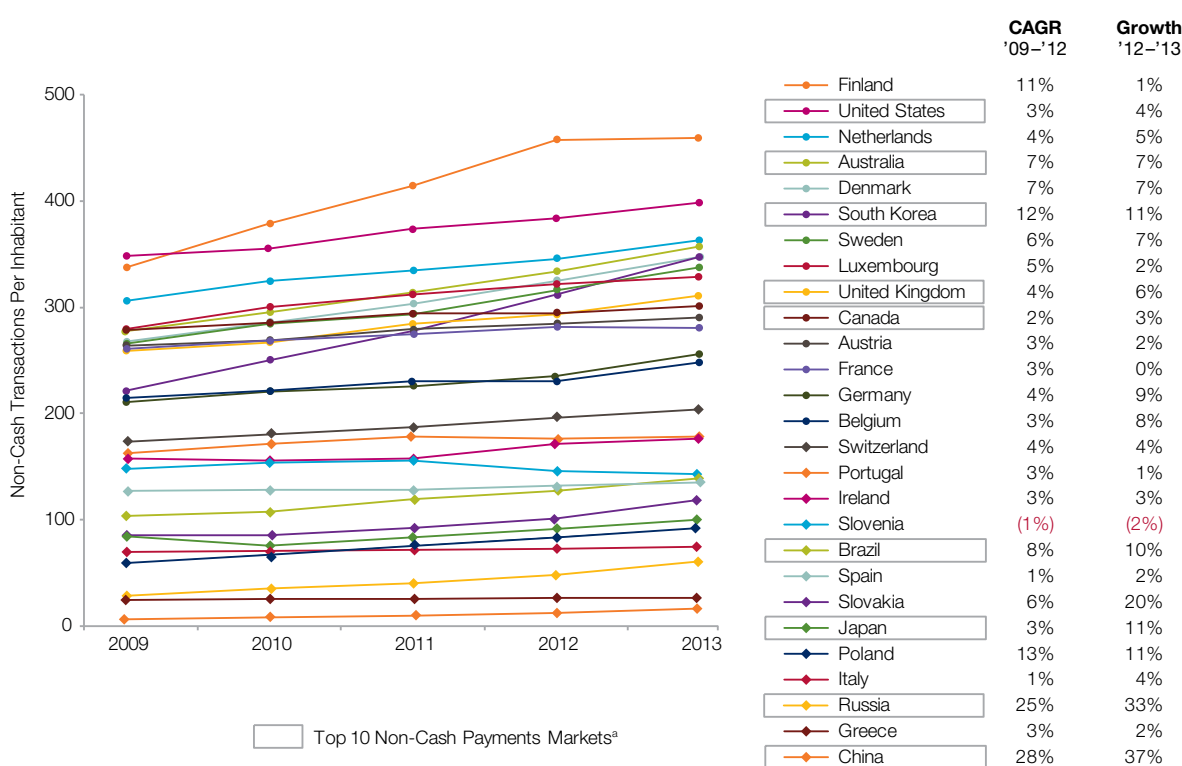
At the other end of the scale, China's inhabitants made less than 50 non-cash transactions in 2013, but the growth rate of 37% between 2012–2013 was the highest among the main non-cash markets.

Poor economic conditions in Slovenia during 2013 led to a decline in non-cash transactions per inhabitant from 137 in 2012 to 134 in 2013. There is still wide disparity in Eurozone countries, with figures ranging from 17 transactions per inhabitant in Greece (struggling to recover from an economic crisis) up to Finland's 451.

The enormous gap in transactions per inhabitant between mature economies (such as the U.S.) and developing economies (such as China and Russia) is a symptom of various social, political, and geographical differences.

Payments services are much more developed in mature economies than in developing ones. There are also cultural differences in spending habits, for example, mature economies feature more credit-based spending whereas developing economies tend to have a greater focus on savings. The structure of commerce also differs, with spending in mature economies focused in large shopping centers as opposed to developing economies' small retail stores and local boutiques. All of these factors have led to higher per-inhabitant non-cash transactions in mature economies. However, factors such as increasing e-commerce globally and payment innovations are expected to narrow this gap in the coming years.

Figure 1.4 Number of Non-Cash Transactions per Inhabitant in the Top 10 Non-Cash Payments Markets, 2009–2013



Note: Numbers for France have been restated for 2009–2012 as per refinements to our methodology; Chart numbers and quoted percentages may not add up due to rounding; Some numbers may differ from data published in WPR 2014 due to previous year data updated at the source level

a The Eurozone has not been highlighted as a leading key market as most of its individual members have been displayed on the chart

Source: Capgemini Financial Services Analysis, 2015; ECB Statistical Data Warehouse, 2013 figures released September 2014; Bank for International Settlements Red Book, 2013 figures released December 2014; Country's Central Bank Annual Reports, 2013

Globally, Card Transactions Led Growth and Increased their Share of the Non-Cash Market

Growth in global non-cash transaction volumes during 2013 occurred in all payments instruments other than checks, which declined by 10.9% (see Figure 1.5). The dominance of card transactions in Emerging Asia—82%—is notable, albeit on a comparatively low base of 29 billion card transactions in 2013. Direct debits account for only 2% of non-cash payments in this region, credit transfers 9%, and checks 7%. Europe has a more balanced payment instruments mix, with cards accounting for 44% of transactions, direct debits and credit transfers both at 26% and checks at 4%.

The share of non-cash transactions made via card instruments climbed to 62.8% in 2013, up from 60.9% in 2012. Although growth in debit card payments slowed in 2013 (11.5% versus 13.3% in 2012), this payment instrument remains the most used of all payment modes. Rejuvenated growth in mature markets, as electronic and mobile payments are increasingly made via debit cards, will help to strengthen debit cards' hold on non-cash transactions. The use of debit cards in the U.S. grew by 8.3% in 2013, a recovery from the decline to 5.5% experienced in 2012. A total of 61 billion debit card transactions were made in the U.S., dwarfing the next biggest market for debit cards, Europe, with its total of 34 billion transactions.

The growth rate of credit cards remained steady at 9.6%, despite a deceleration in credit card transactions growth in Latin America from 18.2% in 2012 to 10.0% in 2013. However, growth rates in other regions either increased or remained stable. Credit card transactions totaled 69 billion in the period and are expected to accelerate in the U.S. and Europe as economies recover and consumer spending rates improve.

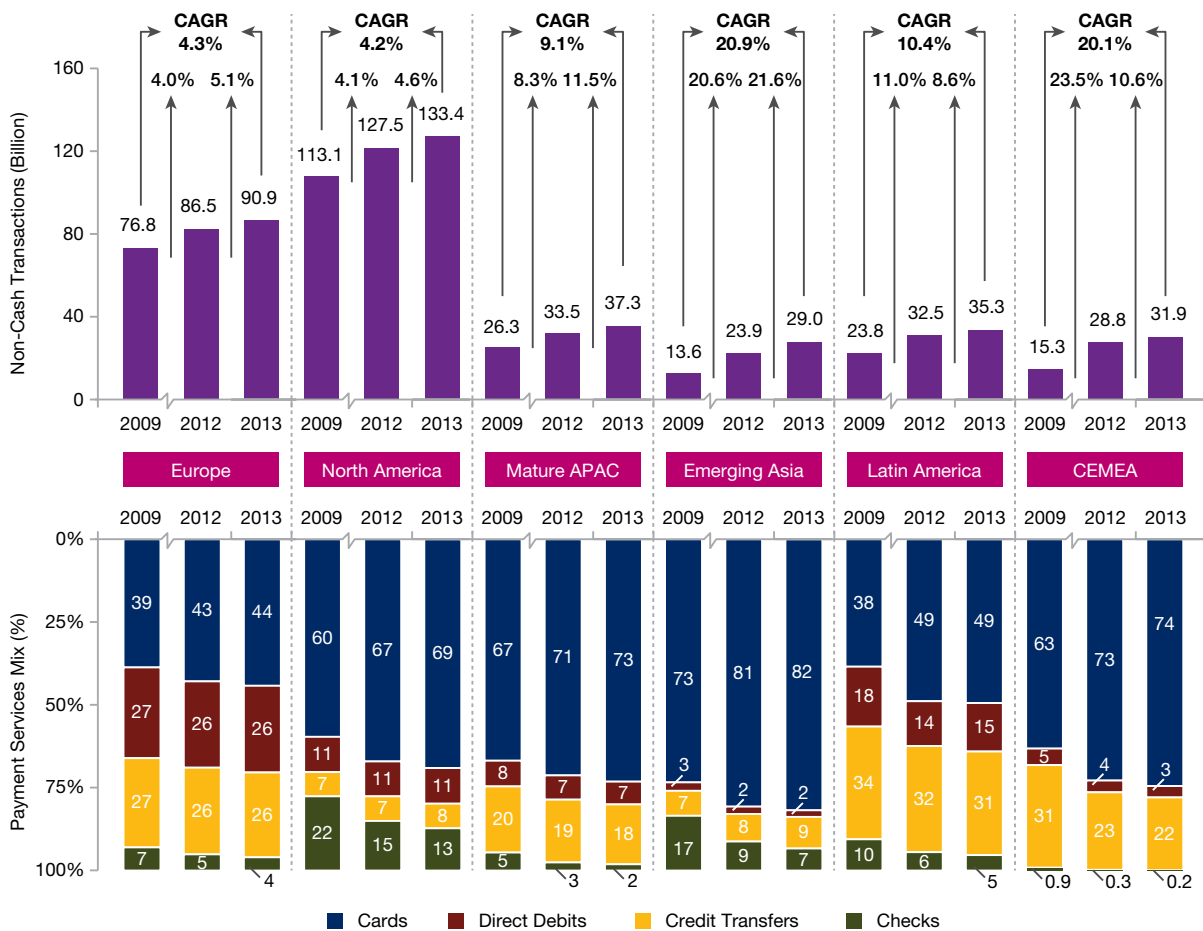
Payments made via credit transfers gained momentum in 2013 in mature markets, with Europe accounting for 38.3% of the global market of 61 billion transactions. Higher volumes in North America and Europe were experienced as increased usage of online payments by corporations helped to fuel growth. In Emerging Asia, China and India are driving the growth of credit transfers as online banking usage increases due to wider internet penetration. Use of credit transfers grew by 5.5% in 2013, compared with 5.0% in 2012. Credit transfer transactions growth is expected to be robust in the coming years

as immediate payments become more prevalent across countries. For example, in the U.K. transaction volumes through the Faster Payments Service (FPS) immediate payments platform grew at a compound annual growth rate (CAGR) of 34.6% during 2009–13. Although the growth of credit transaction volumes through FPS seems to have moderated (to 13.8% in 2014), it is significantly higher than the growth rate of credit transfer volumes in the U.K. and FPS is expected to drive non-cash payments growth in the future. Singapore launched its immediate payments platform Fast and Secure Transfers (FAST) in 2014, along the lines of FPS. Australia has also stepped up its efforts to modernize its payments landscape with plans to implement phase one of a National Payments Plan (which includes immediate payments) by 2017.

Direct debit transaction volumes grew at a strong rate, from 3.9% in 2012 to 6.7% in 2013, totaling 47 billion transactions. This was driven by robust growth in Europe, North America, and Latin America. Europe garners the largest share of global direct debits with 24 billion, accounting for one out of every two transactions in the region. Direct debits in Europe are predominantly used for the payment of utilities bills and for tax payments. The U.S. follows with 14 billion direct debit transactions. Growth rates in Europe are 5.3% and in the U.S., 5.8%. The two regions account for 80.3% of direct debit volumes in 2013. Latin America experienced a sudden surge in the growth rate of direct debits, from 4.9% in 2012 to 16.5% in 2013, primarily due to a high growth rate of 16.6% in Brazil. However, the need for a legal framework and the complexity of mandate management makes direct debit a challenging payment tool for emerging markets.

The use of checks continued to decline in every region, although there is still a significant demand in some markets such as the U.S. and France. However, new innovative payments services in some countries are progressively taking market share. Given the current rate of decline, global check transactions are expected to become less than 5 billion by the end of 2025.

Figure 1.5 Comparison of Non-Cash Transactions (Billion) and Change in Payments' Mix (%), by Region, 2009, 2012–2013



Note: Singapore credit card transaction volume data for all years before 2013 not available; Japan data for direct debits for all years not available; France, Ukraine, and South Africa credit card data not available for all years; Ukraine, Turkey, and Hong Kong direct debit data not available for all years; Ukraine, Hong Kong credit transfer and checks data not available for all years; South Africa direct debit and credit transfer data available from 2009 onwards; Numbers for France have been restated for 2009–2012 as per refinements to our methodology; Some numbers may differ from data published in WPR 2014 due to previous year data updated at the source

Source: Capgemini Financial Services Analysis, 2015; ECB Statistical Data Warehouse, 2013 figures released September 2014; Bank for International Settlements Red Book, 2013 figures released December 2014; Country's Central Bank Annual Reports, 2013

China Is Expected to Move into Fourth Position in Global Non-Cash Transaction Volumes in 2014

Growth in North America and Emerging Asia is expected to have driven global non-cash volumes to 389.7 billion in 2014, an increase of 8.9% (see Figure 1.6). The global growth will be fostered by economic recovery in the U.S. and robust non-cash payments growth in Emerging Asia. In North America, growth is expected to have accelerated to 5.5%, compared with 4.6% in 2013. Despite this, the market share held by the U.S. is expected to have declined from 34.4% in 2013 to 33.4% in 2014, as higher growth levels in Asia-Pacific erode this lead.

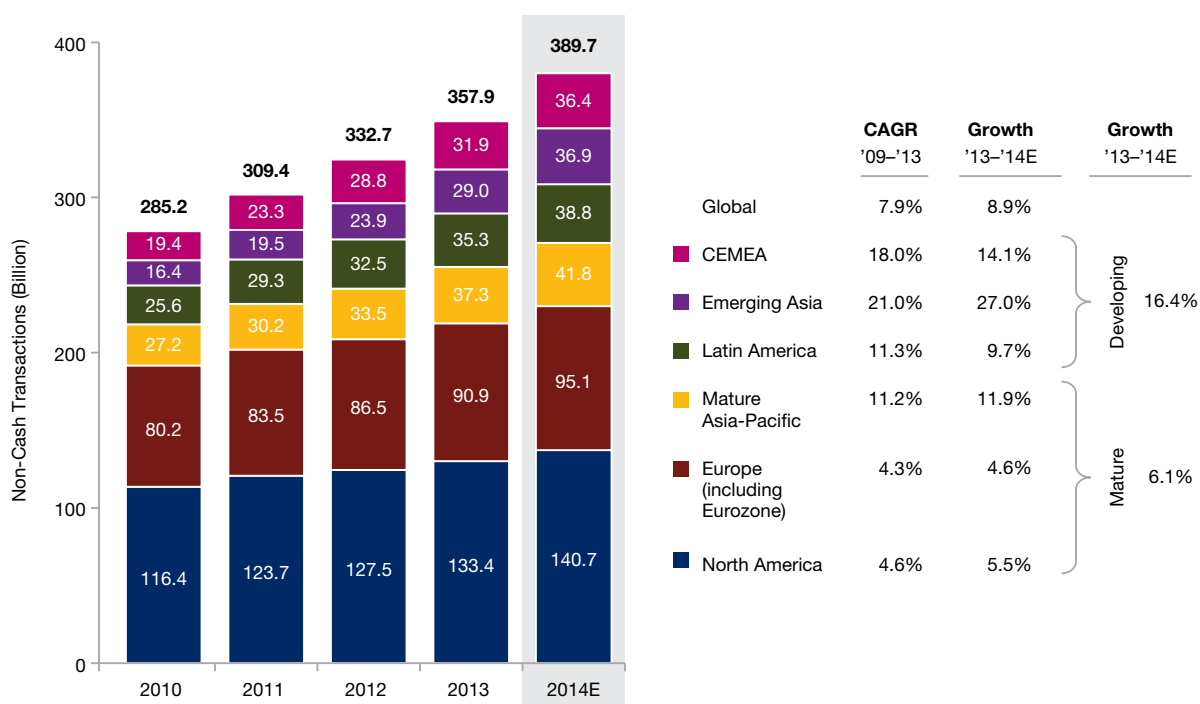
Non-cash transactions growth in Emerging Asia is expected to have accelerated to 27.0% in 2014 from 21.0% in 2013. Increasing internet penetration and burgeoning adoption of mobile payments in China and India will drive growth in Emerging Asia. China's non-cash payment volumes are expected to have surpassed those of Germany, the U.K., France, and South Korea in 2014, moving the market into fourth position globally (behind the U.S., Eurozone, and Brazil).

Adoption of contactless and mobile payments by customers in mature markets, initiatives such as EMV in the U.S. (see page 27) to modernize payments infrastructure, and implementation of immediate payments systems across markets are likely to drive non-cash payments growth globally in the near future.

Investments targeted at improving convenience, efficiency, and security are likely to convince more consumers to move away from cash, thus generating non-cash transactions growth. Immediate payments offerings also can foster the growth of non-cash transactions, as happened in the U.K., where the FPS infrastructure has been leveraged to launch mobile-based overlay service offerings such as Paym and Zapp.

A significant percentage of non-cash transactions growth will also be due to the rise of hidden payments (see page 16), which are not reported in volume statistics as traditional payments instruments.

Figure 1.6 Number of Non-Cash Transactions (Billion), by Region, 2010–2014E



Note: Refer to Methodology section for details on countries included in each region; Chart numbers and quoted percentages may not add up due to rounding; Some numbers may differ from data published in WPR 2014 due to previous year data updated at the source

Source: Capgemini Financial Services Analysis, 2015; ECB Statistical Data Warehouse, 2013 figures released September 2014; Bank for International Settlements Red Book, 2013 figures released December 2014; Country's Central Bank Annual Reports, 2013

COLLABORATION IS THE KEY TO SUCCESS IN SINGAPORE'S NON-CASH MARKET

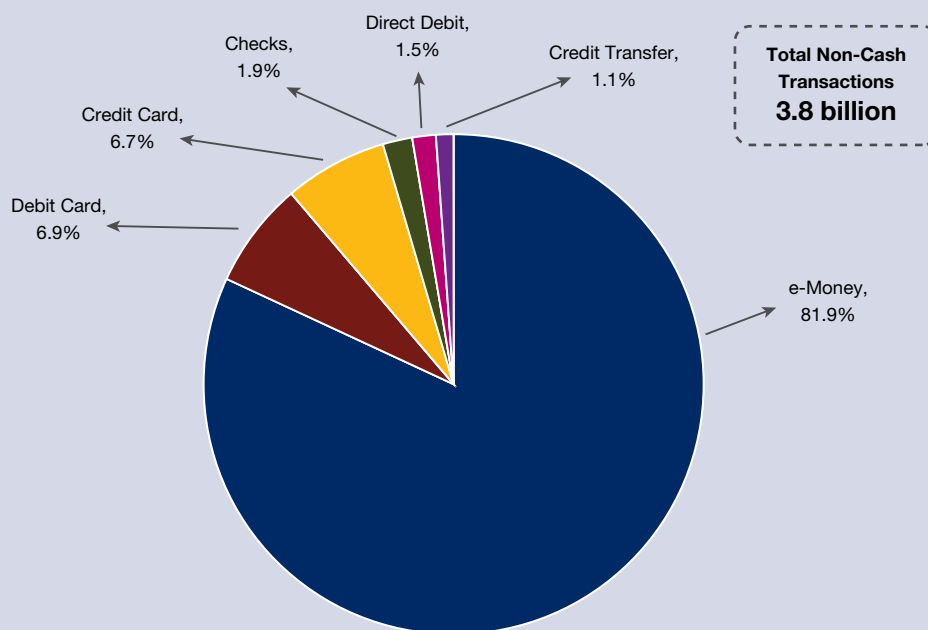
Singapore has a strong payment services ecosystem, the result of effective collaboration between government agencies including the Monetary Authority Singapore (MAS) and Infocomm Development Authority (IDA), private players including telecommunications companies, PSPs, and infrastructure providers.

The non-cash payments market reached 3.8 billion transactions in 2013, the vast majority of which (80%) were made using prepaid payment instruments, known as e-money (see Figure 1.7). The introduction of the Specification for Contactless e-Purse Application (CEPAS) in 2009 helped to boost e-money volumes in the country. The CEPAS standard created a nationwide interoperable micro-payment platform that bridges multiple sectors, in particular the transit and retail e-commerce space. Volumes of other payments instruments are dwarfed by e-money volumes: debit card transactions represent just 6.9% of non-cash volumes, credit cards 6.7%, checks 1.9%, direct debits

1.5%, and credit transfers 1.1%. Although the number of check-based payments has diminished during the past few years, their use is still prevalent among corporations, particularly for high-value payments.

Card ownership is high in Singapore, with inhabitants holding an average of eight cards each. Broken down into card types, inhabitants hold an average of 4.3 e-money cards, 2 debit cards, and 1.7 credit cards. There were a total of 43.3 million payment cards in circulation in Singapore in 2013, of which 23.1 million were e-money cards, 10.9 million debit cards, and 9.3 million credit cards.¹⁰ Despite this high card ownership, the number of cards issued continues to rise—during 2009–2013 the number of cards issued rose by 8.7%, and between 2012–2013 that leapt to 13.6%. Notable growth was recorded in the issuance of credit cards, the number of which rose from 7.7 million in 2012 to 9.3 million in 2013, a rise of 20.7%.

Figure 1.7 Non-Cash Transactions in Singapore, by Payments Instrument, 2013



Note: e-Money is the value stored on either a card or personal/central computer, which is issued against an advance payment and is widely accepted as a means of payment by parties other than the issuer;

Source: Capgemini Financial Services Analysis, 2015; ECB Statistical Data Warehouse, 2013 figures released September 2014; Bank for International Settlements Red Book, 2013 figures released December 2014

10 Bank for International Settlements, Red Book, 2014 (2013 figures)

E-money, stored value facility (SVF) schemes are extremely popular in Singapore, with mass acceptance of this payment type for transport and retail payments. There are three types of SVF schemes:

- **Widely accepted** schemes are used for a variety of purposes and have a stored value with a pre-defined threshold limit of S\$30 million. The schemes can be used for purchase of goods and services provided by the operator of the scheme and other parties. Examples include EZ-Link, primarily a public transport scheme operated by EZ-Link and Citibank, and NETS FlashPay, a public transport and retail scheme operated by Development Bank of Singapore, Oversea-Chinese Banking Corporation Ltd., and United Overseas Bank.
- **Multi-purpose** schemes can be used for the purchase of goods and services provided by the operator of the scheme and other parties. Examples include CashCard, which is used in restaurants, entertainment venues, retail stores, and selected parking garages. It is operated by Development Bank of Singapore, Oversea-Chinese Banking Corporation Ltd., and United Overseas Bank. Processing is undertaken by Visa.
- **Single purpose** schemes are used for the purchase of goods and services provided only by the scheme operator. Examples include SingTel Prepaid, operated by telecom company SingTel and used to top-up mobile SIM cards.

Non-cash payments are expected to grow in Singapore as innovations continue in the immediate payments framework and in mobile payments. The FAST platform, launched to meet increasing consumer demand for faster funds transfer services, is a good illustration of this. Launched by the Association of Banks in Singapore (ABS) in March 2014 for immediate payments processing, FAST has made fund transfers more efficient by reducing the transfer time from three days to near real time, using the interbank GIRO fund transfer system. Fourteen banks participate in the scheme, which offers near immediate payment, 24/7 availability, a maximum limit of S\$50,000 per transaction (subject to daily or monthly withdrawal limits), access via desktops, laptops, smartphones, and tablets, and a fund transfer facility between current and savings accounts.

While Singapore's regulatory authorities worked closely with banks to launch FAST, there are pre- and post-implementation challenges for banks. The main

challenges include meeting the service level agreement to send incoming payment notifications in less than five seconds, ensuring compliance with guidelines on shorter system downtime, and analyzing the scope of changes needed to the existing payments infrastructure to facilitate immediate payments. Despite these challenges, the move to immediate payments in Singapore was quick: FAST was announced in June 2012 and went live in February 2014.

In mobile payments, innovations continue as banks and other organizations are developing new apps to create a seamless payments experience for consumers. The rewards are obvious, as Singapore has a high mobile penetration rate with an average of 1.5 phones per person.¹¹ In October 2014 Singapore was the world's leading nation in terms of smartphone adoption, with 85% of inhabitants using smartphones.¹² The opportunities to use mobile phones for payments are abundant in both retail and commercial payment environments. Examples include DBS's mobile wallet PayLah, and MasterCard's MasterPass. Contactless payments schemes are popular as CEPAS and a solid infrastructure for near field communication (NFC) payments created by mobile operators SingTel, M1, and StarHub in collaboration with Citibank, DBS and EZ-Link, and Gemalto have created ideal conditions for such payments to flourish.

Government initiatives and industry collaboration have driven the development and governance of Singapore's payments industry. MAS has played a key role in effectively managing and regulating various payment systems, including the real-time gross settlement (RTGS) systems, the interbank GIRO and check systems, and multi-purpose, stored value schemes. Government agencies have also played their part. Private enterprise has also played its part, with various players in the country's payments industry, such as banks, payment services providers, telecom companies, and third-party infrastructure providers collaborating on innovative products and services.

Singapore is a good example of a payments ecosystem with high usage of prepaid instruments, as well as a ready infrastructure for immediate payments. The potential to build upon FAST could drive the next wave of payment innovation in Singapore.

11 "Statistics on Telecom Services for 2015 (Jan–Jun)", iDA Singapore, <http://www.ida.gov.sg/Tech-Scene-News/Facts-and-Figures/Telecommunications/Statistics-on-Telecom-Services/Statistics-on-Telecom-Services-for-2015-Jan-Jun>

12 "Asia's mobile-first world", <http://googleasiapacific.blogspot.sg/2014/10/asias-mobile-first-world.html>, 28 October, 2014

HIDDEN DIGITAL PAYMENTS VOLUME ESTIMATED TO BE AT LEAST 10% OF NON-CASH MARKET AND TOO BIG TO IGNORE

We first examined hidden payments¹³ in WPR 2013, a phenomenon driven by regions becoming more active in non-cash payments and an increasing share of the market being taken by non-banks. As the figures for 2014 indicate, the market share of hidden payments is now too big to ignore. Hidden payments transaction volume is estimated to have reached 24.5–40.9 billion in 2014 (see Figure 1.8). At the upper end of this range, hidden transaction volume could be as big as 10% of the total estimated non-cash transactions for 2014. Moreover, our estimates may be conservative: some senior industry executives interviewed for WPR 2015 believe the market size could be as high as 20% of the reported numbers.

Estimation of hidden payments volumes is difficult because, by definition, such transactions go unreported. The payments industry has become increasingly complex as new, non-traditional payment mechanisms enter the market. Many of these are offered by non-banking players, who are not subject to the same regulations as some traditional providers and who are not obliged to report payment transactions. Statistical data collection for these payments is therefore less accurate than for traditional payments mechanisms.

We have considered four main categories¹⁴ of hidden payments:

- **Closed loop cards and mobile apps:** Many non-bank companies are providing their own closed loop cards to promote loyalty programs and provide a convenient way for customers to pay for goods. Private-label cards and mobile apps are used for a variety of payments, including road tolls, parking and transport fees, and also for micro-payments such as the Starbucks mobile app.
- **Digital wallets (non-banks):** These are gaining prominence among consumers as they provide a flexible and convenient way to transfer money. PayPal and Alipay both offer digital wallets that have grown at a solid pace as mobile payments proliferate.
- **Mobile money (non-banks):** Mobile money mechanisms have enabled people without access to banking facilities to make financial transactions using their mobile phones. In Kenya, for example, the number of active users of M-Pesa was 13.9 million at 31 March 2015 and there are now over 85,000 M-Pesa merchant outlets across the country.¹⁵ Mobile money volumes are triple those of traditional non-cash payment instruments in the country.¹⁶
- **Virtual currencies:** Virtual currencies enable users to send or receive value instantly without the intermediation of a financial services institution. Bitcoin is arguably the most well known digital currency and companies including Dell and Expedia now accept bitcoins for payment.

The market share of hidden payments ranges between 6.3% up to 10.5% depending on the estimation scenario. Transaction volumes of closed loop cards and mobile apps are estimated to be in the range of 15.1 billion to 22.6 billion in 2014, followed by mobile wallets at between 8.2 and 16.5 billion. There is a significant opportunity for growth in the prepaid mobile apps category; transactions for the Starbucks mobile app grew by 64.5% in 2014 to reach 0.3 billion. Complemented by the increasing acceptance and popularity of mobile payments, digital wallets are likely to become more widely used and their market share will grow accordingly. While virtual currencies are still a small proportion of the market, they have gained a great deal of media attention and are likely to continue to grow as more merchants and retailers accept them.

¹³ Hidden digital payments are those not statistically reported under traditional payments instruments such as debit/credit cards, checks, direct debits, and credit transfers

¹⁴ In the absence of an industry standard classification, we have considered four main categories, but there are other sources of hidden payments

¹⁵ Safaricom financial results, www.safaricom.co.ke

¹⁶ Central Bank of Kenya, <https://www.centralbank.go.ke/index.php/2012-09-21-11-44-41/payment-systems-statistics>

Figure 1.8: Hidden Payments Market Estimation, 2014

Category	Transaction Volumes (Billion)	
	Lower Range	Higher Range
Closed Loop Cards/ Mobile Apps	15.1	22.6
Digital Wallets	8.2	16.5
Mobile Money	1.1	1.8
Virtual Currencies	0.03	0.04
Total	24.5	40.9
Hidden Market as Percentage of Estimated Non-Cash Transaction Volumes in 2014	6.3%	10.5%

Note: Our methodology (see Methodology, page 54) to estimate transaction volumes of hidden payments is likely to be conservative and the actual number might be much higher

Source: Capgemini Financial Services Analysis, 2015; Global Prepaid Opportunity, MasterCard, 2012, <http://newsroom.mastercard.com/photos/prepaid-opportunity-mastercard-prepaid-2012/>; An Inside Look At The Starbucks App, The Most Successful Mobile Payments System In The US, <http://www.businessinsider.in>, September 2014; www.paypal.com; "Alipay 2014 Spending Report Sheds Light on Chinese Online Spending Behavior", <http://www.businesswire.com/news/home/20141207005046/en/Alipay-2014-Spending-Report-Sheds-Light-Chinese#.VcbOovVhBc>, December 2014; "China's poorer, remote provinces are taking the lead on mobile payments", <http://newsroom.mastercard.com/photos/prepaid-opportunity-mastercard-prepaid-2012/>, December 2014; Central Bank of Kenya, May 2015; www.blockchain.info

The key drivers of hidden payments are customer demand, gaps in existing value propositions, lack of customer access to traditional payments, and the regulatory environment.

- Consumers want convenient and faster payments transactions, and a number of non-traditional providers have emerged to meet this demand, leveraging advances in technology to develop new products and services. PayPal demonstrates how a non-traditional payment service provider has seamlessly integrated its offerings to provide funds transfer and allied payments services to its users.
- The gaps in value propositions have emerged because banks, constrained by legacy infrastructure, find it more challenging to develop new propositions. Consumers are increasingly willing to engage with the products and services of non-banks, who are sometimes perceived as better at meeting their requirements.
- The lack of access to traditional payments is being addressed by services such as M-Pesa, which provides immediate money transfer to customers who previously had no access to traditional payments instruments. The convenience and flexibility in transferring funds and making payments offered by M-Pesa allow customers to transfer money using mobile phones.

- Non-banks are typically governed by consumer protection laws rather than the more stringent financial regulations that banks face. This softer regulatory environment often fosters an easier and quicker route to market for new products and services.

In addition to the growing size of the hidden payments market—and possibly as a consequence of it—all types of industry players are now beginning to feel the impact. In an online survey conducted by WPR 2015, 82% of respondents, who included representatives from banks, non-bank financial services institutions, IT and advisory firms, and industry associations, said hidden payments were an issue for banks.

The growth of the hidden payments market poses concerns regarding data privacy, and information security for all stakeholders in the payments industry: banks, non-banks, customers, and regulators. The lack of coherent data related to such payments makes it challenging for banks and non-bank PSPs to develop relevant new payment services. Customers face challenges because consumer protection regulations related to information security, dispute resolution, and deposit insurance have not evolved for hidden payments. Regulators face challenges because this is a relatively new and fast-growing method with opaque

governance. Some hidden payments also present a challenge to regulators in fighting money laundering and tax evasion. For corporate retailers considering expansion into new territories, the lack of data for hidden markets poses challenges in determining the optimal operating and processing models.

As customers demand faster and more convenient payments services, the hidden payments market is gaining momentum as for some transactions it better fulfills requirements than traditional payment methods. With the increasing acceptance of non-traditional payments mechanisms by consumers and businesses, the hidden payments market will become increasingly significant in the future. The size of the hidden payments market and its anticipated growth puts it on the regulatory radar, as well as the radar

of all stakeholders. Despite the challenges posed to traditional PSPs by the hidden payments market, these providers can use hidden payments as an opportunity to align their operating model with customer demands and add new revenue sources to their portfolios. Any future payments strategy, be it client, regulatory or product related, will need to take into account the hidden payments market.







2 Standardization and Innovation Remain Important Themes Driving KRIs

Key Findings

- **Implementing key regulatory and industry initiatives (KRIs)¹⁷ is increasingly complex not only because of the number of KRIs but also as some are very detailed while others are still in development, leading to many possible interpretations.** Standardization and innovation continue to be key objectives underpinning KRIs, while the opening up of the payments market to new competitors by regulators continues to gain momentum.
- **The cascading of regional KRIs across the globe continues.** All market participants, including clients, would benefit from greater harmonization of the timing and content of the regulatory agenda across regions.
- **KRIs currently attracting significant attention in local markets are the Payment Services Directive II access to accounts (PSD II XS2A) in Europe, the EMV standard in the U.S., and the new PSR in the U.K.** Globally, immediate payments and intraday liquidity initiatives are gaining the most attention and having significant impact.
- **There is a shift in the regulatory agenda as financial regulators scrutinize not only the implementation of existing KRIs, but also intensify their focus on adding value through innovation.** Through a series of initiatives, aided by competition and new technology, regulators are promoting innovation. Regulatory action and monitoring is essential for KRIs to move swiftly from the inception stage through to the proliferation stage of its lifecycle.

¹⁷ Our criteria for KRI Addition/Retention in WPR 2015: Should be either a regulation (OR) an industry initiative in which all players need to participate (OR) an existing KRI with implementation/execution in progress (AND) KRI should not be more than three years old (or have a good reason for remaining)

Payments Industry Participants Navigate an Increasingly Complex Regulatory Environment as KRIs become More Global, Detailed, and Specific

Standardization and innovation continue to be key themes as payments industry participants navigate an ever-changing regulatory and industry environment. In complying with a large number of KRIs, participants must balance strategic, tactical, and operational issues with an awareness of the increasing competition from new entrants. At the same time, the security of payments transactions must be ensured. Four key industry objectives continue to characterize the KRI environment: risk reduction, standardization, competition and transparency, and innovation (see Figure 2.1).

Many of the new and high-impact KRIs come under the innovation or standardization themes, including the U.K.'s PSR (#29),¹⁸ the access to accounts (XS2A) provisions in Europe's PSD II (#28), the Reserve Bank of India (RBI) initiative to issue payments bank licenses (#26), China International Payment System (CIPS, #11), and the moves towards immediate payments in various jurisdictions (#14).

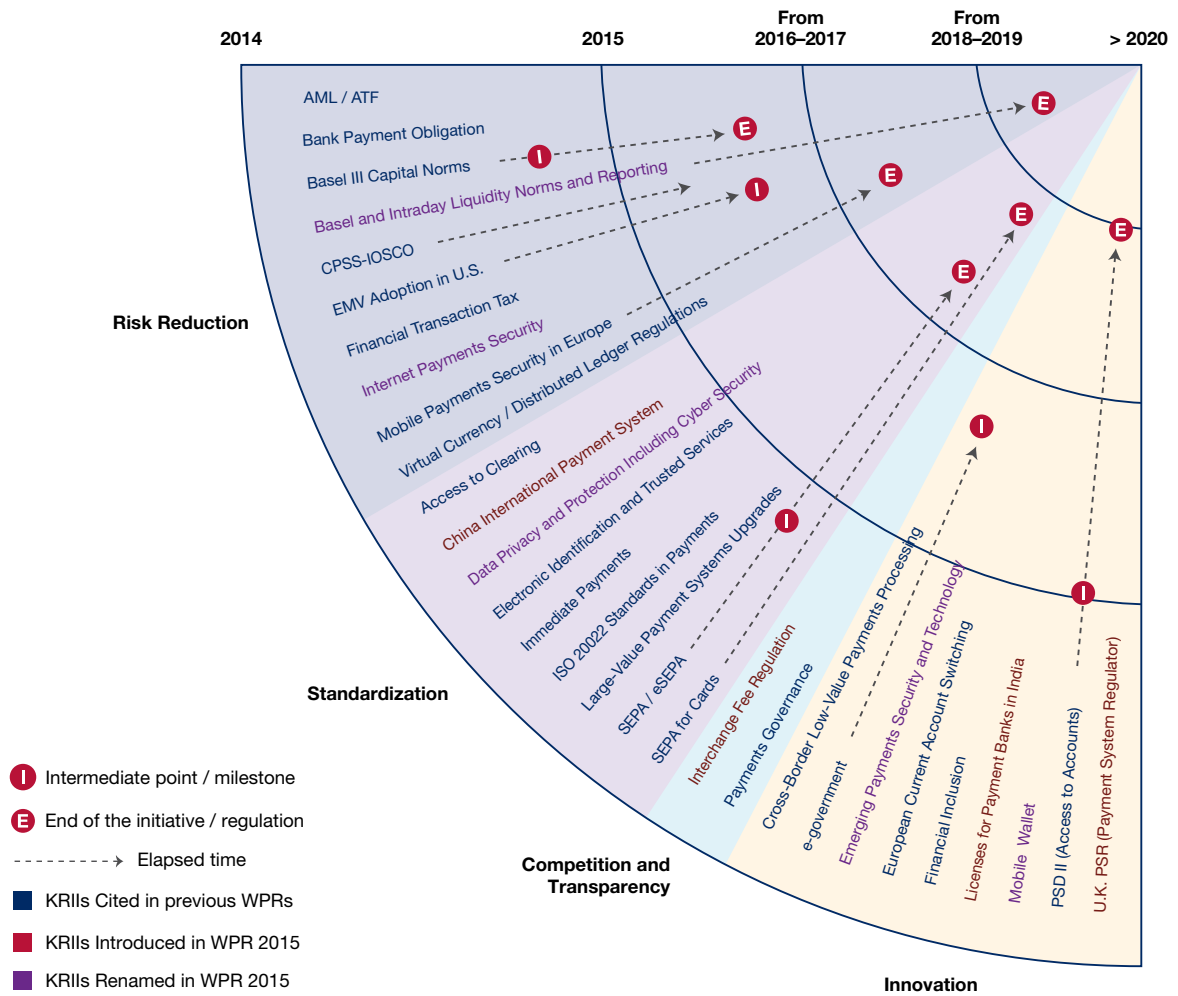
The ISO 20022 messaging standard is being deployed by the most recently launched immediate payments initiatives. Standardization helps to harmonize payment systems, making them interoperable across different regions. Also as KRIs such as PSD II and the PSR help open up the payments market to competition, the promotion of common standards will help banks and third parties to develop common apps and APIs that can be used by banks and non-banks alike.

In addition to the sheer number of KRIs with which the industry has to contend, further complexity is added by the nature and development stage of some KRIs. Some initiatives are very specific and detailed, for example the intraday liquidity and reporting requirements of Basel III (#3b) while others are open to many possible interpretations as the details are finalized. An example is the third-party access to accounts introduced in PSD II, which is still subject to further definition in Regulatory Technical Standards (RTS), which the Directive requires the European Banking Authority (EBA) to further develop. Banks are seeking more clarity on a number of aspects, including liability allocation, security measures, the level of information they and their customers need to share with third-party payment providers (TPPPs) including log-on credentials, transparency, and customer authentication.

A representative of a leading automated clearing house (ACH) said: "There is a collision of regulatory objectives in Europe, with regulators trying to promote competition versus overseeing safety and soundness. Basel III is supposed to be implemented globally, but it's interpreted differently in each region, resulting in chaos for the payment systems".

¹⁸ Please refer to the KRI table on page 30 for the serial numbers of each KRI

Figure 2.1 Key Regulatory and Industry Initiatives (KRIs) Clustered by Regulators' Primary Objectives, 2015



Note: Timelines have been provided for regulations where they are specified, no timelines are specified for industry-trend KRIs; CPSS-IOSCO – Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO); SEPA – Single Euro Payments Area; Emerging Payments Security and Technology includes Contactless, Near Field Communication (NFC), Tokenization, Biometric authentication, and Mobile Point of Sale (mPOS)

Source: Capgemini Financial Services Analysis, 2015; World Payments Report, 2014, 2013, 2012, and 2011

IMPACT OF KRIs ON PAYMENTS INDUSTRY VARIES AS THEY CONTINUE TO CASCADE ACROSS REGIONS

Our heat map of KRIs (see Figure 2.2) illustrates the impact of each KRI on the payments industry, globally or regionally, from the PSP and PSU perspectives. For PSPs, we examined the impact on payments processing, product offerings, and existing business models. For PSUs, we looked at the impact in terms of transparency, speed, safety, and enhanced experience. The findings were then validated with leading industry executives. The KRIs with the most extensive influence on a global level are the implementation of immediate payments systems, the Basel and intraday liquidity norms and reporting, Basel III capital norms, and emerging payment security technologies (#23) such as contactless, near field communications (NFC), tokenization, biometrics, and mobile point of sale (MPOS). Among European KRIs, SEPA for cards (#18), the U.K. PSR, and large value payments system upgrades (#16) top the list of KRIs with the most impact. The U.S. is most concerned with the adoption of EMV standards, while in emerging markets¹⁹ financial inclusion initiatives (#25), CIPS, and India's payment bank licenses are top of the agenda.

The most notable impact of regional KRIs is on the cost of services for PSUs. Those KRIs focused on competition and innovation, such as licenses for payments banks in India, interchange fee regulations, CIPS, and financial inclusion, are making payments services more affordable for users.

The cascading effect of KRIs has continued.

An online survey²⁰ of payments industry experts conducted for WPR 2015 found that more than 80% of respondents think that regulations are cascading from one region to another and becoming more global, detailed, and specific.

Many of the KRIs such as intraday liquidity norms, payments governance, cross-border, low-value payments processing (#21), mobile wallets (#27), and internet payments security were launched across different regions and were then replicated by regulatory authorities or payment industries in other regions. This cascading from regional to global is due to a number of reasons. One such reason is that the success of an innovation (such as the mobile wallet in North America) leads to its expansion in other regions.

This latter example explains why North America, despite being the largest non-cash payments market, has only one regionally specific KRI in Figure 2.2 but is nonetheless affected by those KRIs that are global in nature.

Another area that is gaining prominence across regions is the increasing sophistication of cyber attacks, which continue to be a major concern for payments executives. While the cascade effect is not yet in action, this is an area to watch going forward. Says one senior executive from a global payments processing firm: "Cybercrime is a KRI topic to watch. It should get more emphasis as the consequences of something going wrong are frightening". Another executive says: "Although there are differences in certain markets and with certain payments instruments, there is an increase in fraud levels. Two-factor authentication is not enough; security needs to be stepped up more firmly".

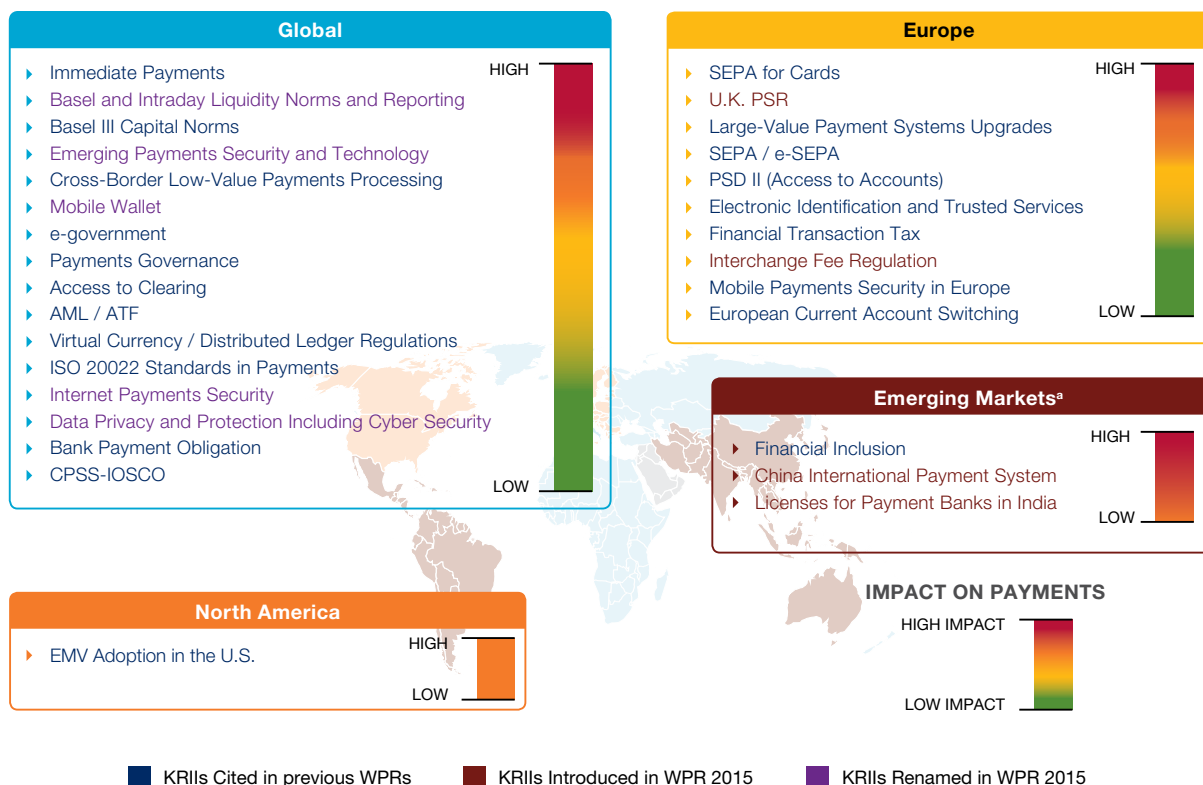
REGULATORS CAN BENEFIT FROM HARMONIZING THE TIMING AND CONTENT OF MANY KRIs

The cascading effect of KRIs means regulators would benefit by collaborating with their counterparts across regions to ensure that there is harmonized development of global standards. This would in turn benefit banks, which could operate more efficiently in a standardized and harmonized global environment, and ultimately benefit clients too. A senior executive at a central bank in Europe says: "If a KRI is global in scope the collaboration will be global, and if it is regional, for example European, there will be European collaboration. But in some cases, such as Dodd Frank and EMIR, there is no formal collaboration so companies that operate internationally may encounter difficulties in adhering to both. There is no specific mechanism to align diverse regional and local definitions". A senior executive from a regional bank in Europe adds: "Regulators should help to harmonize the playing field across regions in KYC, legal contexts, security, and liability so that cross-border payments can be smoother".

¹⁹ Emerging markets are defined as Asia-Pacific, Middle East, and Latin America

²⁰ For details of the survey, please see Methodology, page 54

Figure 2.2 Heat Map of Key Regulatory and Industry Initiatives (KRIIs), Global and Regional, 2015



Note: CPSS-IOSCO – Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO); SEPA – Single Euro Payments Area ; Emerging Payments Security and Technology includes Contactless, Near Field Communication (NFC), Tokenization, Biometric authentication, and Mobile Point of Sale (mPOS); U.K. PSR – United Kingdom Payment Systems Regulator

a Emerging Markets refers to Asia-Pacific, Middle East, and Latin America

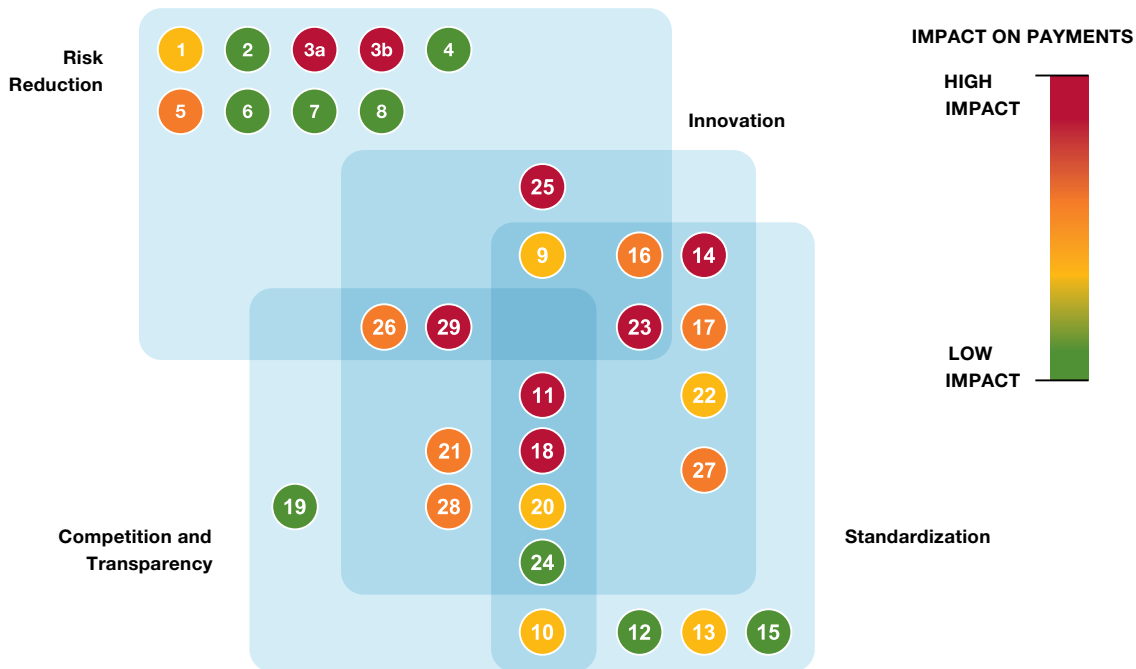
Source: Capgemini Financial Services Analysis, 2015; World Payments Report, 2014, 2013, 2012, and 2011

INVESTMENTS IN INNOVATION: THE KEY TO TRUE VALUE ADD FOR PSUs

In order to add value for PSUs the payment industry is focusing on innovation; more than 50% of KRIIs either directly or indirectly support payments innovation (see Figure 2.3). In many cases, KRIIs with innovation as the primary objective, such as mobile wallets, have resulted in more transparent and improved payments experiences for PSUs. This has led regulators to focus on innovation when designing new regulations. The heat map illustrates the overlapping nature of the four objectives as they relate to KRIIs.

KRIIs with innovation as their primary objective are having a huge impact on payments processing, business models and products of PSPs. For example, immediate payments are expected to have a wide impact on the origination, processing, and reporting elements of PSPs. Such payments will also influence the pricing, features/options, and security of products. For PSUs, immediate payments promise greater price transparency, faster transaction times, a safer payments environment, and enhanced user experiences. Nearly all of the global KRIIs will have an impact on PSPs’ processing operations.

Figure 2.3 Overlapping Impact of Key Regulatory and Industry Initiatives (KRIs) on Industry Objectives



- | | | |
|---|---|---|
| KRII | 10 Access to Clearing | 20 Payments Governance |
| 1 AML / AFT | 11 China International Payment System | 21 Cross-Border Low-Value Payments Processing |
| 2 Bank Payment Obligation | 12 Data Privacy and Protection Including Cyber Security | 22 e-government |
| 3a Basel III Capital Norms | 13 Electronic Identification and Trusted Services | 23 Emerging Payment Security Technologies |
| 3b Basel and Intraday Liquidity Norms and Reporting | 14 Immediate Payments | 24 European Current Account Switching |
| 4 CPSS-IOSCO | 15 ISO 20022 Standards in Payments | 25 Financial Inclusion |
| 5 EMV Adoption in the U.S. | 16 Large-Value Payment Systems Upgrades | 26 Licenses for Payment Banks in India |
| 6 Financial Transaction Tax | 17 SEPA / e-SEPA | 27 Mobile Wallet |
| 7 Internet Payment Security | 18 SEPA for Cards | 28 PSD II (Access to Accounts) |
| 8 Mobile Payments Security in Europe | 19 Interchange Fee Regulation | 29 U.K. PSR |
| 9 Virtual Currency / Distributed Ledger Regulations | | |

■ KRIs Cited in previous WPRs ■ KRIs Introduced in WPR 2015 ■ KRIs Renamed in WPR 2015

Note: CPSS-IOSCO – Committee on Payment and Settlement Systems (CPSS) and the Technical Committee of the International Organization of Securities Commissions (IOSCO); SEPA – Single Euro Payments Area; U.K. PSR – United Kingdom Payment Systems Regulator

Source: Capgemini Financial Services Analysis, 2015; World Payments Report, 2014, 2013, 2012, and 2011

Among the many KRIs the industry faces, some have more momentum than others, such as the U.K. PSR, EMV in the U.S., PSD II (access to accounts), and intraday liquidity norms.

U.K. PSR



The PSR has three objectives: to promote competition, innovation, and to ensure payments systems serve the best interests of PSUs. The competition objective aims to promote effective competition in the market for payments systems and services between operators, PSPs and infrastructure providers. The innovation objective is designed to encourage new developments in both service delivery and infrastructure development. The user objective will ensure that payments systems are operated and developed in the best interests of users. This new model is expected to make U.K. payments systems more accessible to a wider range of players, and create a more level playing field for banks and non-banks.

The PSR regulates the key payments systems and operators in the U.K. payments industry. It is currently conducting market reviews on the supply of indirect access to payments systems and the ownership and competitiveness of infrastructure provision. The review of the supply of indirect access will examine the competitive aspects of the current market structure and any factors limiting the number of sponsor banks that offer indirect access. The review on ownership and competitiveness of infrastructure provision will analyze whether the payments infrastructure works in the interests of users and whether there are aspects that could restrict competition and innovation.

EMV Adoption in the U.S.



EMV adoption in the U.S. has gathered momentum as the October 2015 deadline approaches. Some merchants are struggling to be EMV-ready by the deadline with about 50% of merchants—mainly small businesses—expected to miss the deadline. After the deadline, merchants that have not adopted the more secure EMV technology will carry the liability of any loss resulting from counterfeit card transactions. Smaller merchants will take a double hit by not adopting EMV, as not only will they be likely targets for fraudsters, but they will also need to bear the liability of any loss resulting from fraudulent transactions. All of the main payment networks supporting EMV adoption have indicated that they may not be prepared to change the deadline regarding liability as the number of data breaches has increased recently, resulting in leakage of confidential customer data.

Many merchants are expected to leverage the EMV migration to also adopt new security-related technologies such as encryption, tokenization, and newer payment formats such as Apple Pay to offer customers more secure transaction processing. The delayed implementation of EMV by some merchants has unexpectedly served as a boon as they can utilize the upgrades they need to do to be compliant to also incorporate advances in other technologies such as NFC, tokenization, and biometrics. By doing so they should reduce their overall capital investments.

PSD II (Access to Accounts) in Europe



Due to be implemented into national legislation by European member states by late 2017, PSD II will have a significant impact on banks. The EBA has the key related task of drafting the supporting Regulatory Technical Standards (RTS).

Banks must make strategic decisions about their implementation of PSD II requirements, including whether to approach this as purely a compliance initiative or to take a more strategic approach. Existing TPPs will be brought into the regulatory environment for the first time, which should help to reduce the volumes of hidden payments.

A senior payments executive from a leading European bank told WPR 2015: “In a time horizon up to 2018, the access to accounts aspect of PSD II and immediate payments will be the initiatives that will change the payments landscape radically. Changes will be required not only from an infrastructure point of view, but also banks as account servicing institutions will have to be ready to provide immediate payments services”.

Basel Intraday Liquidity Guidelines and Reporting



The Basel intraday liquidity management guidelines aim to ensure that financial institutions can manage their intraday liquidity positions and risks in order to meet payment and settlement obligations on a daily basis. Financial institutions also have to be more transparent in reporting daily net cash positions, which requires the management of large volumes of data. The data to be provided includes balances, forecasting of cash flows using factual and predictive data, payments flows, and confirmations. Data from customers, bank branches, correspondent banks, and markets will be used to create liquidity dashboards to enable treasurers to monitor payment liabilities at any given time.

Underpinning the Basel intraday guidelines are the liquidity risk management guidelines introduced through Basel III. The main aim of the Basel III guidelines is to assess the ability of institutions to meet liquidity requirements ranging from short-term (30 days) on a daily basis, to one long-term (one year). The implementation of the guidelines has gathered pace and many regions have provided specific guidelines for financial institutions. For example, in the U.S., separate monitoring guidelines for small and for large institutions (those with more than \$250 billion in assets) have been issued. Implementation is scheduled to be complete by January 2017. In the European Union, the norms are being implemented under the Capital Requirements Directive IV (CRD IV).

The regulations will have a significant impact on liquidity, requiring banks to constantly manage liquidity in the most effective and efficient way.

Regulators Have an Important Role to Play in Helping KRIs to Deliver their Objectives

We have observed that most KRIs go through three lifecycle stages (see Figure 2.4). Once regulators introduce a KRI (inception), PSPs are encouraged to adopt or comply with the KRI and provide feedback on implementation, etc. (sustenance). These efforts help payments firms to comply with the KRIs as adoption increases (proliferation).

Regulators play a key role during the three lifecycle stages of KRIs. An example can be found in the case of immediate payments services. Regulators' efforts to facilitate immediate payments services highlight their aim to create a level playing field for banks and non-banks. This will foster competition and innovation in the industry. Regulators in some regions are ensuring that banks have the necessary infrastructure ready to support innovation and compete with non-bank providers who previously were not part of the regulatory environment. Additionally, regulators are introducing initiatives such as virtual currency regulations and increased oversight of non-banks to ensure they are subject to similar scrutiny as banks. This will also help to ensure that the growing hidden payments market comes under the regulatory framework (see page 16).

While earlier regulatory efforts were mainly focused on containing risks in the system, many new regulatory initiatives are focused on innovation. Examples include PSD II XS2A and immediate payments implementation around the globe. The EC's digital agenda, the remit of the PSR, and the increased global focus on virtual currency regulations also demonstrate this shift in emphasis. Although the development of some payment services, such

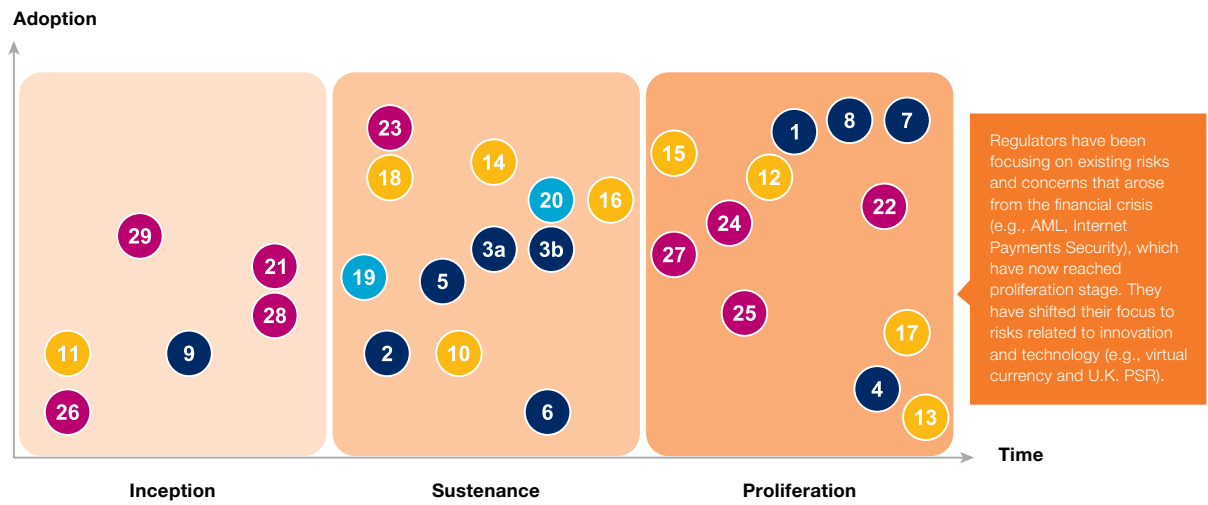
as virtual currencies, is nascent, financial regulators are increasing their focus on these value-added and innovative offerings. According to the online survey of payment industry experts conducted for WPR 2015, more than 70% of payments industry experts believe virtual currency regulations will have a significant impact on their business models.

Regulators also need to ensure that they are delivering dual harmonization, including consistency across instruments as well as regions.

As advances in technology, such as NFC, tokenization, and blockchain lead to new payments instruments, financial regulators must ensure that there is harmony among the objectives of different regulations. They also have to strive for harmonization across regions as global KRIs are implemented at a different pace in individual countries. Regulators need to evaluate the progress made on the adoption of each KRI and ensure that their objectives are met. This will include working closely with industry participants, taking regular feedback, making amendments to regulations as needed, and possibly modifying the approach to enforce regulations.



Figure 2.4 Lifecycle Stage of Key Regulatory and Industry Initiatives (KRIs), 2015



KRI

- 1 AML / AFT
- 2 Bank Payment Obligation
- 3a Basel III Capital Norms
- 3b Basel and Intraday Liquidity Norms and Reporting
- 4 CPSS-IOSCO
- 5 EMV Adoption in the U.S.
- 6 Financial Transaction Tax
- 7 Internet Payment Security
- 8 Mobile Payments Security in Europe
- 9 Virtual Currency / Distributed Ledger Regulations
- 10 Access to Clearing
- 11 China International Payment System

- 12 Data Privacy and Protection Including Cyber Security
- 13 Electronic Identification and Trusted Services
- 14 Immediate Payments
- 15 ISO 20022 Standards in Payments
- 16 Large-Value Payment Systems Upgrades
- 17 SEPA / e-SEPA
- 18 SEPA for Cards
- 19 Interchange Fee Regulation
- 20 Payments Governance
- 21 Cross-Border Low-Value Payments Processing
- 22 e-government

- 23 Emerging Payment Security Technologies
- 24 European Current Account Switching
- 25 Financial Inclusion
- 26 Licenses for Payment Banks in India
- 27 Mobile Wallet
- 28 PSD II (Access to Accounts)
- 29 U.K. PSR

- Risk Reduction
- Standardization
- Competition and Transparency
- Innovation

Source: Capgemini Financial Services Analysis, 2015



KEY REGULATORY AND INDUSTRY INITIATIVES IN PAYMENTS, 2015

Key #	Key Regulatory and Industry Initiatives (KRII)	Brief Description / Update
KRIs added to WPR 2015 have been presented in maroon text in the table below. Those renamed have been presented in purple text.		
1	Anti-Money Laundering (AML) / Anti-Terrorism Financing (ATF)	<p>Many countries already have strong AML rules in place to identify, assess, and monitor money-laundering risk. The fourth EU AML Directive takes effect from June 2017. The Directive applies to a range of businesses including banks, other FIs, and businesses that make or receive cash payments for goods worth at least €10,000, regardless of whether payment is made in a single, or series of transactions.</p> <p>The Funds Transfer Regulation (Reg 2015/847) will replace the existing wire transfer regulation (Reg 1781/2006) and extend its scope. New requirements are the inclusion of beneficiary name and account number, and a requirement for effective procedures at intermediary banks to detect and deal with missing or incomplete payer/payee information. Compliance may require enhancements to payment systems and associated AML processes.</p> <p>The U.S. Department of the Treasury's Financial Crimes Enforcement Network (FinCEN) published proposed regulations designed to strengthen the U.S. AML rules. The proposal requires financial institutions subject to the Bank Secrecy Act (BSA) to conduct KYC due diligence on beneficial owners with 25% or greater ownership interest in, and on an individual in control of, the customer/client.²¹</p>
2	Bank Payment Obligation (BPO)	A BPO is an irrevocable undertaking given by one bank to another bank that payment will be made on a specified date after a specified event has taken place. BPO was used for the first time in October 2014 as UniCredit and Bank of Tokyo-Mitsubishi completed the first Germany/Japan BPO deal. The first global trade finance and cross-border payment achieved with BPO was a transaction in April 2015 involving four entities: BHP Billiton, Westpac, Cargill, and ANZ.
3a	Basel III Capital Norms	<p>The Basel Committee for Banking Supervision (BCBS) performed preliminary assessments of the EU, U.S., Singapore, Switzerland, China, Brazil, Australia, Canada, and Japan on Basel III compliance and found that the EU was materially non-compliant, while the U.S. and all other jurisdictions were compliant.</p> <p>Assessments of Hong Kong, Mexico, India, South Africa, Saudi Arabia, and Russia will take place in 2015. Argentina, Turkey, Korea and Indonesia will be assessed in 2016.²²</p>
3b	Basel and Intraday Liquidity Norms and Reporting	<p>Seven measures of banks' intraday liquidity usage proposed by the Basel Committee on Banking Supervision (BCBS) will bolster the framework for immediate settlement of funds by ensuring that the funds can be accessed the same business day. The EBA intends to roll out intraday liquidity guidance in December 2016, preceded by a consultation paper expected to be issued in mid-2016.</p> <p>The implementation of intraday liquidity norms in the U.S. is expected to be completed by 2017 and in Europe by 2019.</p>
4	CPSS-IOSCO	The European Securities and Markets Authority (ESMA) guidelines and recommendations, CPSS-IOSCO Principles for Financial Market Infrastructures in respect of Central Counterparties, went live in November 2014. ²³ The Committee on Payments and Market Infrastructures (CPMI) and IOSCO began the first level 3 assessment of the implementation of the Principles and is expected to publish the results in 2016.
5	EMV Adoption in the U.S.	The U.S. federal government introduced the BuySecure Initiative in October 2014, which plans to apply EMV chip technology to newly issued and existing government payment cards and terminals. According to EMVCo, it is estimated that there will be 600 million chip cards in the U.S. by end of 2015, increasing to 900 million in 2016. Although large retailers are well prepared in terms of meeting the deadline for EMV migration, small merchants and small banks are still not EMV ready and might struggle to meet the October 2015 deadline. ²⁴
6	Financial Transaction Tax (FTT)	<p>In the EU, 11 countries are engaged with the FTT via the Enhanced Cooperative Procedure. To date, FTT has been implemented in France (equities only) and in Italy. The amount of tax collected in both countries is below expectations and does not recoup the cost of collection.</p> <p>The implementation for all member states involved is scheduled for January 2016. The scope and principles of the FTT are still under discussion between the EC and member states and as such the implementation date could change.</p>

21 http://www.willkie.com/~media/Files/Publications/2014/08/Treasury_Department_Proposed_Anti_Money_Laundering_Regulations.pdf

22 "Implementation of Basel Standards", Basel Committee on Banking Supervision, November 2014, <http://www.bis.org/bcbs/publ/d299.pdf>

23 ESMA publishes Guidelines regarding CPSS-IOSCO Principles for Financial Market Infrastructures in respect of Central Counterparties, 4 September 2014, www.esma.europa.eu

24 "The EMV Deadline: Will Small Businesses Take the Hit?", PaymentWeek, April 2015, <http://paymentweek.com/2015-4-22-the-emv-deadline-will-small-businesses-take-the-hit-7085/>

Key #	Key Regulatory and Industry Initiatives (KR/II)	Brief Description / Update
7	Internet Payment Security	<p>Many nations across the globe have implemented internet payment security measures. In India, the Reserve Bank of India (RBI) mandated two-factor authentication for all online credit card payments.</p> <p>The EBA published Guidelines on the Security of Internet Payments in December 2014. These final guidelines provide the legal basis for achieving a minimum security standard on a level playing field for all PSPs in the EU. There is a particular emphasis on strong customer authentication. The deadline to implement the guidelines was 1 August 2015. However, the U.K., Slovakian and Estonian regulators have all decided not to seek compliance by this date. The U.K. regulator has advised that it will seek compliance following implementation of the PSD II.</p>
8	Mobile Payments Security in Europe	<p>The European Payments Council (EPC) has welcomed the SecuRe Pay Forum's initiative on mobile security but it cautions on the risks of stifling emerging solutions and business models by imposing too detailed security requirements at this early stage. The European Central Bank proposes that the recommendations should be implemented by mobile payments service providers (MPSPs) by 1 February 2017.</p>
9	Virtual Currency/ Distributed Ledger Regulations	<p>The current regulations governing virtual currencies are restricting growth. New York's Department of Financial Services (DFS) has established a virtual currency regulatory framework, commonly known as the Bit-License and other U.S. states are also considering releasing guidelines.²⁵</p> <p>Banks and technology firms are showing more interest in adopting blockchain technology due to the potential to reduce costs and improve product offerings. The use of distributed ledgers has the potential to disrupt the payment industry in the near future.</p>
10	Access to Clearing	<p>China has opened card clearing to foreign competition and from 1 June 2015, foreign companies such as Visa and MasterCard as well as other domestic companies were eligible for bank card clearing licenses.</p> <p>Faster Payments, the U.K. payment clearing system, is planning to expand access to additional PSPs in late 2015 to meet increased demand from the client base of smaller PSPs for immediate, real-time payment services. Some clearing systems are opening up to non-domestic banks. The U.K.'s CHAPS, for example, recently went live through the UK branch of BNP Paribas.</p>
11	China International Payment System (CIPS)	<p>CIPS will help promote the yuan as a global currency and is expected to launch by the end of 2015. CIPS will be based in Shanghai and will facilitate cross-border trade settlement, direct investments, and other yuan deals. The network will consolidate and replace the existing multiple clearing houses that process yuan payments, and will rival majors such as Visa and MasterCard.</p>
12	Data Privacy and Protection Including Cybersecurity	<p>Cybersecurity law in the EU and the proposed Personal Data Notification & Protection Act in the U.S. set standards for how companies respond to cybersecurity breaches. The U.S. Act requires any business involved in interstate commerce that collects the personally identifiable information of more than 10,000 people to notify the individuals and the news media within 30 days of discovering a data breach.</p>
13	Electronic Identification and Trusted Service (eIDAS)	<p>The eIDAS regulation was launched in October 2014 in Brussels by the European Commission (EC) and the eIDAS Task force. This regulation seeks to enhance trust in electronic transactions in the internal market by providing a common foundation for secure electronic interaction between citizens, businesses and public authorities. This will increase the effectiveness of public and private online services, electronic business, and e-commerce in the EU. It is seen as a key to unlock the Digital Single Market. It has the participation and sponsorship of private sector stakeholders. EU institutions, together with public administrations in member states are committed to eIDAS as they believe it will be of benefit to EU citizens and businesses.</p>
14	Immediate Payments	<p>The Euro Retail Payments Board (ERPB) asked the EPC to develop a pan-European scheme for immediate payments based on SCTs. Other parties are looking into solutions for immediate payments, possibly based on this scheme.</p> <p>In Singapore, Fast and Secure Transfers (FAST), a real-time national payment system, went live in 2014.</p> <p>The U.S. Federal Reserve, has published a consultation paper on immediate payments implementation, and in Australia, work has started on the New Payments Platform, which will provide the framework for immediate payments in that country. Dutch banks committed to introduce immediate payments in 2019.</p>

25 "New York's Lawsky Proposes Lighter Regulations for New Bitcoin Companies", PaymentsSource, 22 April, 2014, <http://www.paymentsource.com/news/compliance/new-yorks-lawsky-proposes-lighter-regulations-for-new-bitcoin-companies-3020002-1.html>

Key #	Key Regulatory and Industry Initiatives (KRII)	Brief Description / Update
15	ISO 20022 Standards in Payments	<p>The ISO 20022 standard, which has been deployed for the Single Euro Payments Area (SEPA), can be leveraged for all immediate payments systems as a common standard to provide interoperability at core messaging level.</p> <p>For example, Singapore has chosen the newer, internationally accepted ISO 20022 standard for FAST and Sweden has also moved away from its existing ISO 5853 to ISO 20022 for payments.</p> <p>The ISO Real-Time Payments Group (RTPG), comprised of 50 global experts and supported by Payments UK, published a first draft in August 2015, on ISO 20022 messages for an international project on cross-border immediate payments.</p>
16	Large Value Payment Systems Upgrades	<p>Target2-Securities (T2S), the integrated securities settlement platform for Europe, went live on 22 June 2015²⁶ at Bank of Greece's depository for government bonds, the depository of the Malta Stock Exchange, Romania's Depozitarul Central, and SIX-SIS in Switzerland. T2S will be rolled out in a phased approach ending in February 2017. The ISO 20022-based platform will transform the European post-trade landscape and affects every participant in the post-trade space.</p> <p>Other large value payments systems could migrate to ISO 20022, however this has to be managed alongside the strategic review that is planned for and /or the potential developments of immediate payments in the Eurozone.</p>
17	SEPA / e-SEPA	<p>Since 1 August 2014 all credit transfers and direct debits in the Eurozone are made in the form of SCT and SDD and all legacy instruments were decommissioned. Non-euro countries such as the U.K., Sweden, and Poland will be required to comply with SEPA for their euro payments by 2016.</p>
18	SEPA for Cards	<p>The SEPA for Cards initiative defines a standard set of requirements for scalable and interoperable terminal and card infrastructure across SEPA. All the parties participating in the SEPA cards domain will be encouraged (but not forced) to roll out products and services based on this version. From 2017 card present transactions are expected to meet the requirements for new terminals and cards.</p>
19	Interchange Fee Regulation	<p>The Interchange Fee Regulation came into force on 8 June 2015. The caps on interchange fees will be applicable from December 2015. Instead of a cap of 0.2% on individual debit card payments, it suggests that the 0.2% could represent a weighted average of all payments made during the year.²⁸</p>
20	Payments Governance	<p>Central banks across the globe have set up payments governance systems to manage risk, encourage common standards, and foster competition and innovation.</p> <p>In the U.K., the PSR was created to provide governance and control of payment systems.</p> <p>The EPC resolved in October 2014 to adapt its structure to further enhance governance and stakeholder involvement. The revised charter was published in February 2015 and is now effective.</p>
21	Cross-Border Low-Value Payments Processing	<p>Industry participants would like an alternative to correspondent banks for cross-border low-value payments. One alternative for processing such payments are via immediate payments schemes.</p> <p>Real-time cross-border payments are expected to increase significantly in Europe.</p>
22	e-government	<p>In 2014, for the first time, all 193 United Nations member states had national websites, although the majority remain at the low or intermediate levels of e-government development.</p> <p>Many e-government initiatives are being taken up across the globe in UAE, Africa, Asia, and in Ukraine and Italy in Europe.</p> <p>The EU e-Government Report 2015 shows that there is much scope for improvement of online public services in Europe. Improvements can be made in the ease and speed of use of services, user-centricity of cross-border public services (online services for nationals of another EU country), and mobile friendliness of public websites.</p>

²⁶ http://www.swift.com/assets/swift_com/documents/news/Special_Report_T2S_2014_vFsingle.pdf

²⁷ <https://www.gfmag.com/magazine/february-2015/sepa-springboard-real-time-payments>

²⁸ "Regulation (EU) 2015/751 on Interchange Fees for Card-Based Payment Transactions", May 2015, http://www.finance.gov.ie/sites/default/files/Multilateral_Interchange_Fees_Consultation_Paper_May2015_0.pdf

Key #	Key Regulatory and Industry Initiatives (KR/II)	Brief Description / Update
23	Emerging Payment Security Technologies (Contactless, NFC, Tokenization, Biometric, and mPOS)	<p>In 2013, the percentage of smartphones that were NFC enabled was 18% and is expected to reach 64% by 2018.²⁹ Many companies, including Apple, have launched various NFC-enabled mobile payment solutions.</p> <p>The Mobile Payments Industry Workgroup (MPIW) convened a meeting in June 2014 to discuss several industry tokenization initiatives being developed for digital and mobile retail payments.</p> <p>A tokenization subgroup was created to evaluate the different tokenization approaches and determine how industry stakeholders can coordinate efforts to achieve the optimal approach.</p> <p>Many banks such as RBS, Bank of Tokyo-Mitsubishi, and ICICI have adopted biometric authentication methods to improve the security of payment transactions.</p> <p>Financial technology companies such as PayPal, Square, and Amazon have innovated with mPOS technologies to make payments more convenient for users.</p>
24	European Current Account Switching	<p>The EU Payment Accounts Directive of 2014 sets minimum standards which all EU banks must meet to enable customers to switch accounts to another bank in the same country. The Directive must be effective in member states' law by September 2016.</p> <p>In the U.K., the Current Account Switching Service was introduced in September 2013 to make switching easier. There has been a steady rise in the number of people opting to change their banks. Around 1.2 million people in the U.K. have switched their accounts in 2014, an increase of 12% compared to 2013.³⁰</p>
25	Financial Inclusion	<p>Digital financial services help to enable financial inclusion as they typically use easily accessible devices such as mobile phones.</p> <p>The Indian government launched Pradhan Mantri Jan-Dhan Yojana (PMJDY) in August 2014 with the aim of providing a bank account for every individual. Within the first five months, 115 million accounts were opened. The government's plan is to transfer annual subsidies of around Rs510 billion directly to bank accounts of 155 million beneficiaries in the next year.³¹</p>
26	Licenses for Payment Banks in India	<p>As part of the financial inclusion drive, RBI has issued licenses for creation of payments banks to 11 firms. These banks will provide small savings accounts, and payments and remittance services to low-income households, small businesses, and other users.</p>
27	Mobile Wallet	<p>Mobile wallet initiatives are being taken up by market participants including banks, telecom companies, financial technology providers, and also by governments across the globe.</p> <p>Many private companies such as Apple, PayPal, and Alibaba have created their own mobile wallets.</p> <p>There is potential for a mobile wallet initiative in the UAE as the country has one of the highest mobile phone penetrations in the world at nearly 193%, while smartphone penetration is around 78%.</p>
28	PSD II (Access to Accounts)	<p>PSD II addresses a number of issues that have emerged since PSD I became law in 2009. The most prominent of these is the regulation of third-party payment providers (TPPs). These fall into two main groups: payment initiation service providers (PIS), and account information service providers (AIS).</p> <p>PIS allow customers to initiate payments from their bank accounts using applications provided by third parties. AIS allows aggregator third parties to access account details of the consumer with one or more PSPs and present them in a single view. Other areas of change in PSD II include the extension of some existing requirements to one-leg-in, one-leg-out payments where the payment is to or from a part outside the European Economic Area (EEA), and payments within the EEA in non-EEA currencies.</p> <p>PSD II is expected to complete its European legislative process by the end of 2015. It should be effective in the law of EEA states two years later (although some aspects of TPP requirements require EBA technical standards, which follow slightly later).</p>
29	U.K. Payment Systems Regulator (PSR)	<p>The PSR, launched in April 2015, is the new economic regulator for the £75 trillion payment systems industry in the U.K. The PSR objectives are to:</p> <ul style="list-style-type: none"> • Ensure that payments systems are operated and developed in a way that considers and promotes the interests of all the businesses and consumers that use them. • Promote effective competition between operators, PSPs and infrastructure providers in the market for payments systems and services. • Promote the development of and innovation in payments systems, in particular the infrastructure used to operate those systems.

29 "NFC-Enabled Cellphone Shipments to Soar Fourfold in Next Five Years", 27 February, 2014, <http://press.ihc.com/press-release/design-supply-chain/nfc-enabled-cellphone-shipments-soar-fourfold-next-five-years>

30 "Current account switch service", http://www.bacs.co.uk/Bacs/DocumentLibrary/Monthly_CASS_data_2014.pdf

31 "Jan Dhan Yojna makes it to Guinness World Records, 11.5 cr Jan Dhan accounts opened", The Economic Times, 21 January, 2015, http://articles.economicstimes.indiatimes.com/2015-01-21/news/58305891_1_pmjdy-bank-accounts-jan-dhan-yojna



3

Strategies for Future Payments Industry Transformation

Key Findings

- **The payments industry continues to evolve rapidly, with differentiation for banks increasingly being their ability to provide holistic offerings³² to meet customer demands and compete with initiatives from non-banks.** During the past few years, banks have witnessed rapid evolution in core areas. Changes include the increased fragmentation of the value chain, the emergence of the hidden payments market, innovations in back-office processing, increased competition from non-banks, and the evolving regulatory landscape.
- **By virtue of the payments infrastructure they provide, immediate payments initiatives are a catalyst for banks to move forward in developing new value-add propositions and, ultimately, holistic payments solutions.** To keep a consistent focus on meeting customer requirements and providing a full range of services, banks need to make investments across three layers: value-added services, innovative offerings built on renewed infrastructure, and holistic solutions.
- **Banks in markets where immediate payments infrastructures already exist (or will soon do so) cannot be complacent, as continuous client-centric innovation is required in this fast-moving market.** Immediate payments are not the end goal, but a key enabler for banks to protect the client account relationship and better compete with disruptive non-bank PSPs.
- **To move forward, banks should take a transformational approach to business cases and business model design, as well as commit to delivering new services and accelerating payments ecosystem simplification.** Multiple challenges to payments systems implementation exist, including legacy systems, existing operating models, and lack of a hard business case. Incremental steps towards the implementation of payments systems will mitigate these challenges.
- **The main regulatory objectives behind immediate payments initiatives are a desire to enhance the payments proposition for consumers, although there are variations in how such initiatives are implemented.** In order to ensure the success of an immediate payments system, multiple objectives must be managed for all stakeholders, including customers, supervisory bodies, financial institutions, and commercial organizations.
- **Blockchain technology has the potential to improve the efficiency of financial transactions worldwide and to transform the global financial network.** The technology could accelerate the velocity of money, and provide a path for legacy banking systems to interoperate, greatly improving efficiency. Central banks, financial institutions, and technology firms are discussing and investigating the opportunities and challenges in using the technology.

³² Holistic payment offerings are those that encompass all the payment use cases and leverage various customer touchpoints across multiple payment instruments. For example, the stored value contactless wearable payments devices that can be recharged using different payment instruments such as credit and debit cards, online and mobile devices

Banks Provide the Market with Holistic Offerings, and these Require Ongoing Enhancements

CHANGING PAYMENTS LANDSCAPE

PSPs face a number of challenges in the rapidly evolving payments marketplace. Competition from non-bank PSPs is increasing, and the regulatory landscape globally is becoming more complex. In order to differentiate themselves from other players, and successfully deal with the complexity of the payments industry, banks can leverage their ability to provide holistic payments services.

During recent years, WPR has documented the rapid evolution of the payments industry and its impact on core areas of the value chain. As the value chain has fragmented and new entrants have emerged, banks have responded by innovating in customer-facing areas as well as in their back-office processing environments. In WPR 2012, we explored the way many banks were taking a customer-centric approach towards innovation³³ and that this would bring them onto a more competitive footing with non-bank PSPs. In WPR 2013, we focused on developments in customer-facing innovation and identified four innovation value hotspots in customer acquisition: origination, acceptance and capture, security and fraud, and value-added service and analytics. The increasing fragmentation of the payments value chain was identified as an opportunity for banks to become facilitators of purchasing and selling in addition to being payment providers. Last year, in WPR 2014 we analyzed the need for parallel innovation in processing to keep pace with the innovation seen in the acquisition space. Ensuring client satisfaction remains a core area of focus in the short and long terms. In addition, the key areas of focus in the short term tend to be operational, while over the long term, the priorities tend to be integration, flexibility, and convergence.

Further complexity in the payments industry has arisen from the changing regulatory environment, the increase in hidden payments, and innovation from non-banks. The payments landscape has become more competitive driven by advances in technology. Non-bank PSPs are entering the market with new products and services based on the latest technologies, which can meet customer demand for greater convenience.

Some new products and services are contributing to the growth in hidden payments, which as cited in Section 1, accounted for between 24.5 billion and 40.9 billion of total non-cash transactions in 2014.³⁴

The increasing number of non-bank PSPs has helped to drive a high degree of innovation in the payments industry. As they have utilized existing banking platforms (e.g., access to network and account management) and focused on specific areas of the payments value chain, they have developed some solutions that are faster, more convenient, and lower cost. Non-banks have also driven service adoption by utilizing the proliferation of instruments, locations, and channels to offer unconventional payment methods such as vouchers.

THE CORE ROLE OF BANKS

Banks still have a vital role to play as most new products use existing payments infrastructure (see Figure 3.1). In addition, while clients enjoy the benefits of new offerings such as Apple Pay, they regard their bank account as core to payments.

When providing payment services, banks play multiple roles. These include channel provider (leveraging technologies such as contactless and biometrics), payments processor (of cards, checks/drafts, digital wallets, and stored value cards), and advisor, enabling clients such as merchants to better leverage payment services via, for example, the use of analytics.

At the center are bank accounts that fund other services and enable customers to better manage liquidity and risks by pooling all cash positions across instruments. Receiving all these services through a single provider is thus more efficient than having as many providers as payments scenarios.

However, to meet the growing needs of customers, all three roles will need to evolve in synchronization so that banks can continue to differentiate their offerings from other payment services providers. As commerce and the real economy move further towards a digital and real-time 24/7 environment, banks need to align their proposed payment services with such changes.

³³ In WPR 2012 we defined innovation as the design, development, and implementation of new or altered products, services, and business models that create value for PSPs and/or PSUs

³⁴ For more on hidden payments, see page 16

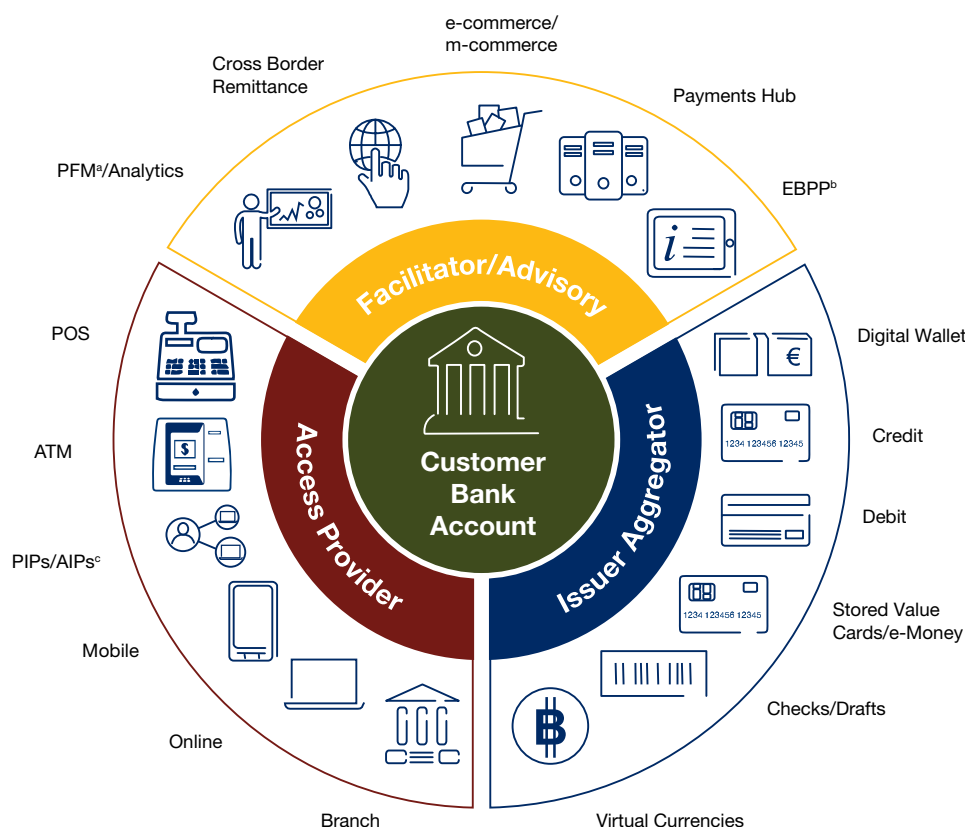
At the same time, the importance of client acceptance and access should not be underestimated. While clients want convenience, security, and speed, if access is limited by device or channel the usage and adoption will be affected. For example, the Apple Pay ecosystem is extensive but not exhaustive and for digital payments to realize their full potential, they must be supported by the majority of merchants and devices.

OVERVIEW OF REQUIRED ENHANCEMENTS AND HOLISTIC SOLUTIONS

Innovative service offerings on existing infrastructure, such as those being built for immediate payments will also be an enabler for banks to differentiate from other PSPs. The focus should be on solving real-world customer issues and improving the user

experience through holistic solutions. Within the payments domain, innovative service offerings can solve customer problems and serve societal needs; Transport for London's Oyster Card, for example, provides a convenient payment mechanism that has reduced waiting times in ticket halls for commuters. The card leverages banking technology for contactless payments that enables the commuter to pay the fare by just tapping a debit or credit card on a reading device. U.K. consumers have widely adopted contactless cards, with 53 million transactions made in March 2015. Biometric identification is an innovative offering being rolled out across the world, and some banking apps can be accessed using fingerprint identification technology.

Figure 3.1 Building Blocks of Payment Offerings by Banks to Serve Customer Needs



- a. Personal Finance Management
- b. Electronic Bill Presentment and Payment
- c. Categories of Third-Party Providers (TPPs) under PSD II XS2A; PISPs – Payment Initiation PSPs; AIPs – Account Information PSPs

Source: Capgemini Financial Services Analysis, 2015

Immediate Payments Are a Catalyst for Banks to Add Value and Develop Holistic Solutions

DEFINING IMMEDIATE PAYMENTS FROM THE CONSUMER PERSPECTIVE

In WPR 2015, we define immediate payments as 24/7 account-to-account (A2A) payment transfer services that facilitate immediate availability of funds to the beneficiary and instant confirmation of such availability within seconds (see Figure 3.2).

The system should be ubiquitous and support a range of payment channels and instruments. Such a system should also deliver digital processing, with transactions conducted electronically and without manual intervention (subject to legal and regulatory restrictions). Transactions processed by the system should be irrevocable. Our definition is oriented to the consumer perspective and is in line with that of the ERPB, which defines immediate payments as electronic retail payment solutions available 24/7, and resulting in the immediate or close-to-immediate interbank clearing of the transaction and crediting of the payee's account. Such a transaction will be carried out irrespective of the underlying payments instrument used (credit transfer, direct debit or payment card), and also irrespective of the underlying clearing and settlement arrangements. The European Savings and Retail Banking Group (ESBG) has further

narrowed the definition to solutions that complement existing systems using either real-time clearing and gross settlement infrastructures, ACHs, or card scheme systems.

Regulators' definitions of immediate payments tend to be wider, covering clearing and settlement and operational functionality. In our survey of payments industry executives, we found our definition resonated. A senior executive at a leading European bank said: "The main characteristic of instant payments is that funds should be available in a few seconds, although the concept relates also to specific data standards, automation, and integration requirements which have to be met in order for instant payments solutions to actually work". Another senior executive at a leading European bank defined immediate payments as: "Real-time payments should be real real-time: a few seconds to actually see debits and credits occurring on the account".

Of 18 initiatives across the globe that claim to be pure immediate payments systems, only nine meet our criteria: BiR in Sweden, Elixir in Poland, FAST in Singapore, FPS in the U.K., IBPS in China, IMPS in India, Instant Payments System in Norway, NIP in Nigeria, and RealTime 24/7 in Denmark. These

Figure 3.2 Defining Immediate Payments from Consumer Perspective

Feature / Attribute	Explanation
24/7 Availability	System should be available at all times ensuring 24/7/365 availability
Instant Delivery	System should clear the transaction instantly delivering the requisite funds to the payee in seconds
Immediate Confirmation	System should give instant real-time confirmation message to both the payer and the payee
Account-to-Account Transfer	System should be ubiquitous and support a range of payment channels and instruments in order to achieve its objective of comprehensive reach
Digital Processing	System should support payment transactions to be conducted electronically without the need for any manual intervention subject to legal and regulatory restrictions
Irrevocability	Transactions processed through the system are irrevocable in nature and cannot be reversed; reversal of payments can be done through separate instructions and thus can counter regulations such as AML and ATF

Source: Capgemini Financial Services Analysis, 2015

initiatives, in varying degrees, meet our criteria of system availability, time for fund transfer, time limit for notification of confirmation or rejection of the transaction, irrevocability, digital processing, and A2A transfer.

IMMEDIATE PAYMENTS AS A CORE ENABLER

Immediate payments systems can act as an enabler for business growth amid the evolving landscape across multiple industries by accelerating transaction speeds, reducing risk and fraud, creating new revenue sources, reducing transaction costs, and reaching new markets. Customers, regulators, banks, and non-banks all benefit from immediate payments initiatives. Banks can match, if not exceed the strength of non-banks in innovation. Non-banks can lower their costs by gaining direct access to the payments system.

The new payments infrastructures built to enable immediate payments are a catalyst for banks to develop new value-add propositions and to provide holistic payments solutions. There are a wide variety of use cases that banks can develop for retail and business customers across a range of payments channels, including P2P, B2B, e-government and mobile payments. For example, a problem for cross-border logistics companies is the requirement to pay customs duties in disparate locations and time zones. An immediate payments solution that solves this challenge would be of real value to such companies. Additionally, while individual digital wallet and mobile app solutions have been developed to meet various real-world customer issues, they have not changed the payments service fundamentally. Rather, they are based on the existing payment network and create a wrapper solution. For example, users of digital wallets have to top-up the instrument via the existing payment network. Banks can provide better immediate services by leveraging features such as A2A or credit transfer. Finally, services built on top of immediate payments

infrastructures benefit from instantaneity and finality that are the core values of cash payments. Given these benefits, the proportion of cash payments in the system should further decline, replaced by immediate payments while decline of paper-based checks should also accelerate.

OVERLAY SERVICES ALLOW VALUE ADD AND DIFFERENTIATION

Banks are already building value-added innovative services on top of immediate payments infrastructures in order to drive transaction volumes. Across different countries, to date immediate payments initiatives have been geared mainly towards P2P and P2M³⁵ use cases. In the U.K., services have been developed across P2P, retail, corporate, and public sector environments. In P2P, banks visualized immediate payments as an opportunity for innovation in customer acquisition and retention and have launched services such as Paym. Overlay services, integrated within a mobile banking application, such as Zapp, are also being developed for P2M and C2B domains. Banks have an opportunity to differentiate for each market segment. Given the fast evolution of the payments industry, any differentiation would however ultimately become a standard and banks need to continuously innovate to have a competitive edge in an environment of rising customer expectations. Banks have to develop their own strategy as well as collaborate in the marketplace to collectively drive the change in consumer behavior.

³⁵ The concept of P2P payments can be extended to the retail environment to allow consumers to directly transfer funds to merchants' bank accounts: customers can use the person-to-merchant (P2M) mechanism for both in-person in-store transactions at POS terminals and for online payments in e-commerce and m-commerce scenarios

Another area that could benefit from immediate payments overlay services is cross-border remittances, the development of which requires concerted efforts from PSPs. Growth rates of cross-border remittances are poised to rise in the coming few years and efforts are under way to improve services. For example, the West African Monetary Zone (WAMZ) has identified exchange control monitoring as a key area of improvement for cross-border payments. For an optimum outcome, the interoperability of immediate payments schemes is crucial. Value-added services could prove to be a key differentiating factor for banks, according to the results of our online survey (see Figure 3.3). Corporate payments, mobile P2P, and cross-border remittances were identified as the most effective differentiators for banks.

An executive of a regional payments processor said: “There is also demand for immediate payments from merchants; not only banks but other users in the payments ecosystem must also embrace immediate payments. For example, a transportation company often needs to be able to pay customs fees when a truck enters a border at, say, 2 a.m.”

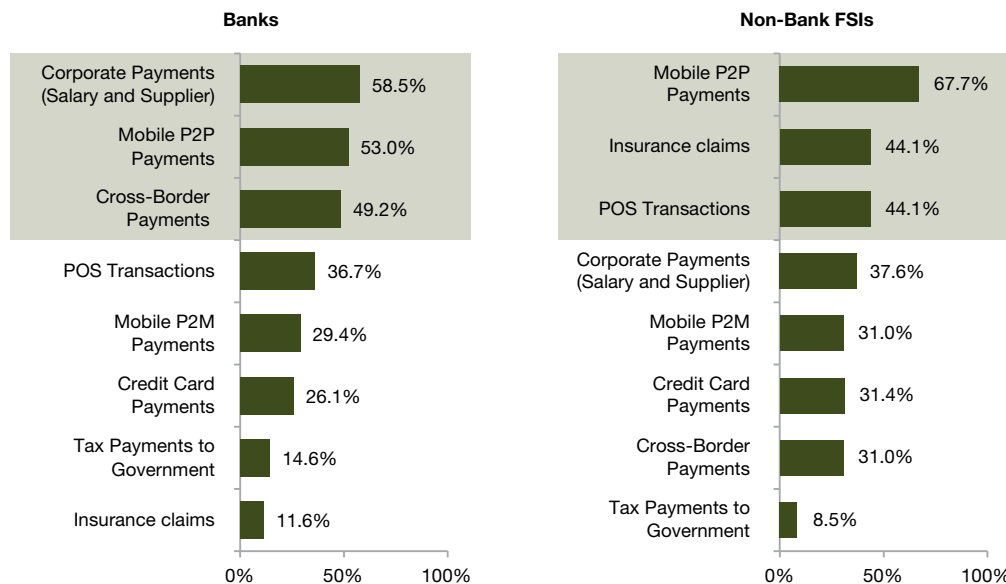
The head of payments at a regional bank says: “Initially, immediate payments developments will be domestic; the need for a regional solution is not there from the start. The impact of immediate payments goes beyond payments and into core banking areas such as client data and accounts. There is an opportunity in immediate payments to share components in the infrastructure that were originally separated (cards and payments), as they may converge”.

CONTINUOUS INNOVATION REQUIRED

Banks should focus their investments on continuous innovation when building customer-centric offerings rather than a series of standalone solutions (see Figure 3.4).

To build a strong payments portfolio banks should focus on building a holistic solution through progressive transformation from tactical, through value-add to holistic offerings. Tactical offerings are typically launched from immediate payments platforms and include use cases such as mobile P2P transfers. Value-add offerings are more advanced,

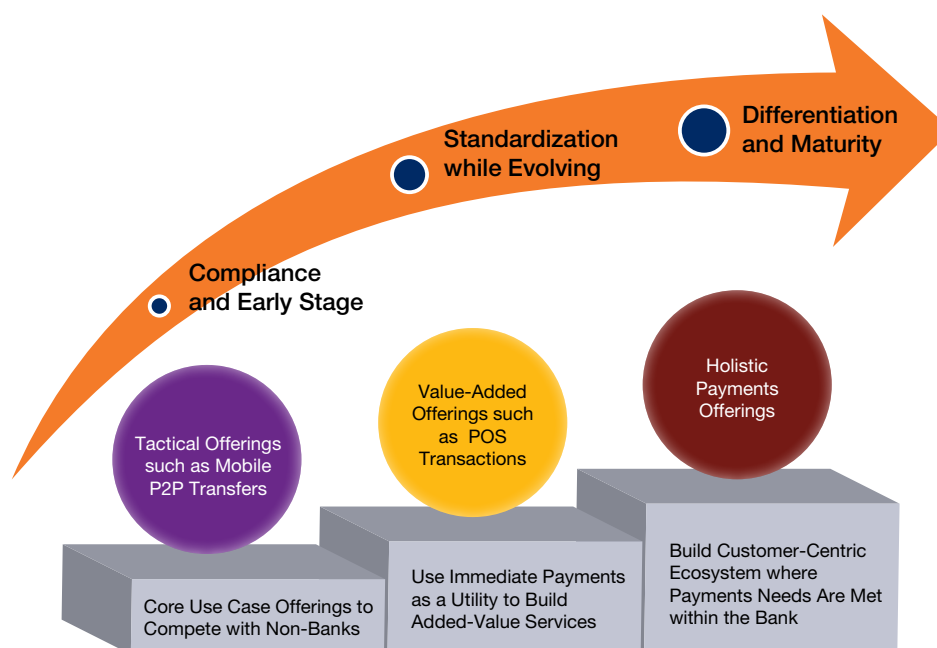
Figure 3.3 Key Areas of Differentiation for Banks by Leveraging Immediate Payments (%), Q2 2015



Note: Percentage represents the proportion of times the individual reason has been selected among top 3 choices by the respondents
 Questions asked, “How do you think banks can differentiate immediate payment offerings from their other current offerings such as cards and digital wallets, outside the obvious white space of person-to-person (P2P) payments?”

Source: Capgemini Financial Services Analysis, 2015; SME Input; Online Survey for WPR 2015

Figure 3.4 Key Investment Opportunities for Banks to Drive Continuous Innovation



Source: Capgemini Financial Services Analysis, 2015; SME Input

leveraging the maturity of the immediate payments infrastructure and the standardization it brings. The U.K.'s Paym is a good example of a value-add offering as it enables all UK account holders to pay a beneficiary instantaneously through mobile with universal security and service level. Finally, holistic offerings are based on a mature infrastructure that has good governance and participatory models. Such offerings should meet all of the payments needs of a customer.

A senior executive from a leading European bank says: "Banks can establish themselves as key players in the digital space, where financial services are not offered in isolation, but rather connected to the business transaction. New service offerings can be linked in the space of liquidity risk management and supplier finance".

As markets plot a course towards immediate payments, they would benefit by reviewing the steps taken by others such as FPS in the U.K.

Here, some participants were initially skeptical about the adoption of FPS, but growth has been very strong, driven by evident benefits.

As U.K. consumers have adopted FPS payments, PSPs have gained the confidence, and business case, to devise new value propositions such as Paym and Zapp. In May 2012, the Payments Council, mandated,

moving the processing of standing orders from BACS to FPS. Volumes and values have steadily increased since then. Between 2013 and 2014, FPS transaction volumes rose by 13.8% to over one billion.

FRAGMENTED PAYMENTS VALUE CHAIN CAN BE UNIFIED

Immediate payments also provide an opportunity to unify the currently fragmented payments value chain. There are two elements to the value chain: front-end activities such as transaction acceptance, authentication, and authorization, and back-end activities including transaction capture, processing, clearing and settlement, and reporting. Banks should aim to deliver truly competitive propositions in both elements of the value chain by developing offerings with seamless transaction processing. At the front end, equally compelling or better value propositions from banks will help in competing with non-traditional PSPs. At the back end, increased system efficiencies and operational changes will help banks to improve digital processing of immediate transactions, agnostic to the channel and instrument.

Aided by infrastructure rationalization and system upgrades the to-be, or desired state of the payments value chain will involve merged activities: authentication, transaction capture and processing, clearing and settlement, and reporting.

Infrastructure Investment Accelerates Delivery Time to Market, Strengthening the Client Relationship

PROTECTING THE ACCOUNT RELATIONSHIP

Banks should approach immediate payments not as the end goal, but as a key enabler to strengthen the client relationship and better compete with disruptive non-bank PSPs. In recent years, non-banks have made inroads into the immediate payments space with private networks that have experienced significant growth. Such networks include Dwolla, Popmoney, and PayPal.

As banks are increasingly enabled to provide more compelling immediate payments offerings, the value proposition of such private networks will be diluted. At present, private immediate payments networks and private overlay services (such as digital wallets and Facebook payments) have a number of advantages, such as being able to more rapidly embrace emerging technologies, which has reduced time to market. Private networks also have concentrated their offerings towards fewer, more lucrative channels such as mobile. This has enabled them to offer very specific and targeted customer experiences. Private overlay services are primarily based on account-to-account transaction processing on their networks, which does not disrupt the existing underlying bank-to-customer relationship. In response, banks can compete with private firms in a number of ways. As regional immediate payments systems gain traction, they will increase the reach and interoperability of the existing disparate systems of the banks, reducing or eliminating the competitive edge of the private immediate payments networks. Private immediate networks will have to partner with PSPs to extend their services and maintain their relevance. In the case of private overlay systems, banks can strengthen their competitive position through holistic immediate payments, which can compete on lower transaction fees, good customer experience, and instant mobile access. The requirement to load prepaid schemes could diminish as banks already hold customer account data.

A senior executive at a regional payments processor highlighted the applicability of immediate payments in the digital wallet environment: “Immediate payments have huge applicability in digital wallets. If I’m a

merchant and can accept lower-cost payment, I will encourage their use. It will be a huge boon to the mobile wallet industry as a whole. Now we control both sides of the node”.

In the markets where immediate payments already exist (and in those where immediate payments will be launched), bank innovation in the account-to-account funds transfer area will reduce or eliminate the need for intermediate private payment gateways and PSPs.

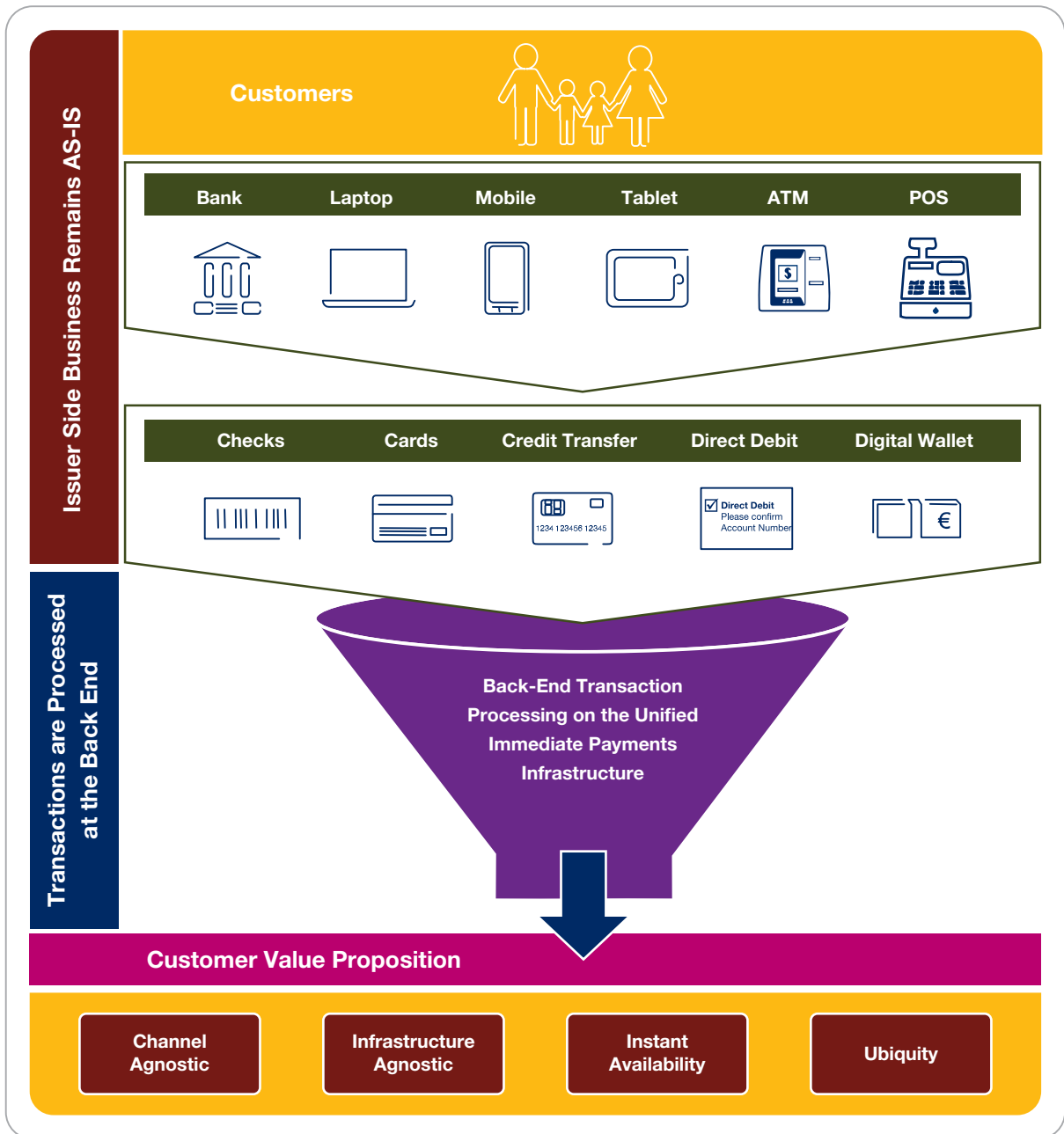
OPPORTUNITY TO RATIONALIZE BACK-END PROCESSING

Immediate payments also offer banks the opportunity to rationalize the transaction processing infrastructure (see Figure 3.5).

The account-to-account transfer feature implies that immediate payments infrastructures can enable uniform back-end transaction processing, irrespective of the payment instrument that initiated the transaction. When developed and managed collectively, the immediate payments infrastructure can rationalize transaction processing. For example, direct debit (pull transactions) can be re-engineered to be processed as credit transfers (push transactions) on the immediate payments infrastructure. While payments issuing can remain as it currently exists, the back-end processing of individual instruments can be modified in order to rationalize payments clearing. For example, in EBA Clearing’s pan-European STEP2 card clearing service, card-initiated payments are processed on an XML-based clearing service that enables individual banks to reuse the interbank infrastructure.

Wider adoption of immediate payments systems provides an opportunity for banks to not only deliver an enhanced proposition but also to build holistic solutions more quickly using the new infrastructure. However, banks must innovate consistently and review revenue models in order to remain competitive. As a consequence, the approach to innovation for immediate payments infrastructures will vary from bank to bank.

Figure 3.5 Rationalizing Back-End Transaction Processing by Leveraging Immediate Payments Infrastructure



Source: Capgemini Financial Services Analysis, 2015

To Prepare for Immediate Payments, Banks Need to Take a Transformational Approach

CHALLENGES WHEN IMPLEMENTING IMMEDIATE PAYMENTS

In transitioning to immediate payments services, banks face multiple challenges, including managing legacy systems, the need to change operating models, and a perceived lack of a business case (see Figure 3.6). By far the biggest challenge is that of legacy systems, identified by 82.5% of respondents to the WPR 2015 online survey.

In order to meet these challenges, banks can take incremental steps towards the implementation of immediate payments. In the case of legacy systems, for example, banks have invested significantly over the years. Banks can utilize existing legacy system capabilities via, for example, API-based enhancements that will provide an interface between legacy systems and immediate payments systems.

Operating models at banks and PSPs are typically silo based and changing to a 24/7 model will require an overhaul of existing ACH and real-time gross settlement (RTGS) systems. To mitigate the impact of such an overhaul, banks can initially focus on rolling

out immediate services on a few channels, such as P2P-based mobile payments. The lack of real-world examples of returns on investment for immediate payments systems has hindered implementation at many banks. Banks can analyze revenue models to recover the cost of implementing an immediate payments system. Interchange fees in the U.S., for example, can evolve into a confirmation fee and cardholder fees can evolve into wallet fees. A leading payments consultant in Europe says: “Banks must focus on recovering their investments in immediate payments by making changes to their existing revenue model. For example, a cardholder fee can evolve into a wallet fee, charged by banks for customers using immediate payments-based services”.

The main challenges to the implementation of immediate payments by banks are in the domains of operations, technology infrastructure, and risk management. In changing existing operations process models to 24/7 operations, banks might need to adjust clearing cycles, augment their liquidity management capabilities, and ensure robust interfaces between the front, middle, and back offices. At the same time,

Figure 3.6 Key Challenges for Banks to Implement Immediate Payments (%), Q2 2015



Note: Percentage represents the proportion of times the individual reason has been selected among top 3 choices by the respondents
 Questions asked, “Please tell us the challenges for the success of immediate payments going forward. When mentioning these you can consider different stakeholders e.g., Bank PSPs, non-Bank PSPs, retail customers, corporate customers, merchants, infrastructure players (SWIFT, VocaLink), and society as a whole”.
 Source: Capgemini Financial Services Analysis, 2015; SME Input; Online Survey for WPR 2015

the technology infrastructure of banks will have to be upgraded to support advanced messaging protocols, peak transaction volumes, and transaction posting across different accounting systems.

Regulators will permit scheduled downtime, but are likely to be less tolerant of unplanned outages (e.g., FAST in Singapore imposes penalties on banks for unscheduled and un-notified outages). In such cases, not only do banks risk penalties from regulators, they also risk damage to their reputation, which can be exacerbated by social media attention. Another element of risk management is connected to the time delay in the processing system banks need to identify suspicious transactions that need to be reviewed manually. When FPS was rolled out in the U.K., banks used strict transaction thresholds to ensure fraud control procedures resulted in faster turnarounds. In markets where immediate payments already exist, regulators might still need to address issues such as improved fraud detection and real-time compliance measures.

OPPORTUNITIES BASED ON IMMEDIATE PAYMENTS

The most significant immediate payments opportunity for banks is the redefinition of customer service offerings for specific use cases, based on holistic product offerings. Such offerings will extend existing P2P and P2M services for retail customers across all channels. Value-added services such as instant balance confirmation, extending the line of credit, and the ability to settle utility bills will help to increase customer adoption. Banks can use immediate payments to launch holistic payments products, which can be based on customer lifecycle management (such as cash management services for corporate clients). Holistic products also can be developed for specific domains, such as remittances and cross-border trade, to ensure more collaborative engagement with customers. Holistic product offerings will become increasingly important in the more advanced payments markets as competition intensifies.

Banks should not stop once they have a level of immediate payments maturity; new entrants are focused on building new, currently unforeseen offerings on top of immediate payments infrastructures.

Says the CEO of a regional payments processor: “It’s a must do. If you are in payments services you need to provide immediate payments as this will become the market standard. Over time, new entrants will want to incorporate immediate payments to build new value propositions such as stock settlement and insurance selling”.

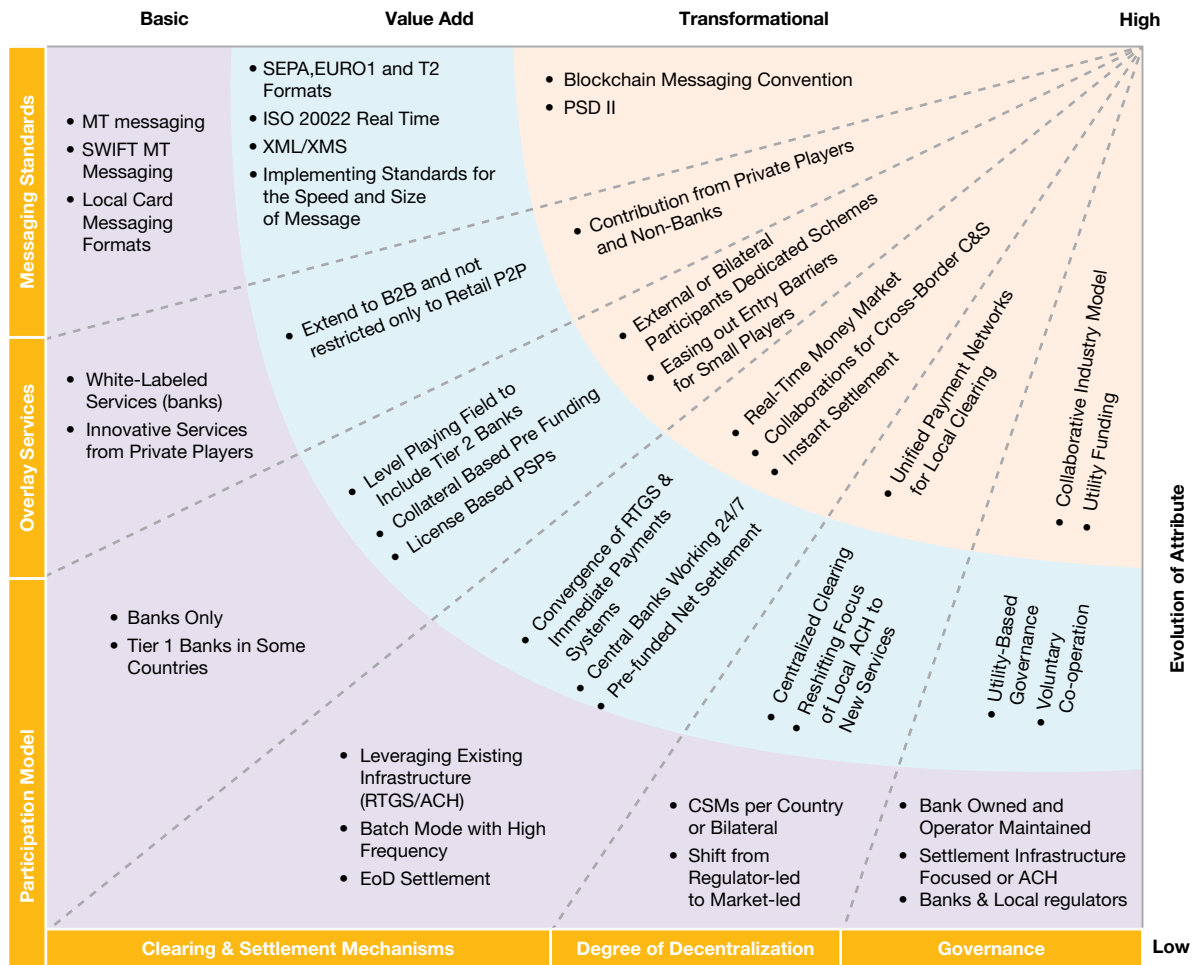
Holistic immediate payments systems can be used to develop an environment in which banks can compete with the private payments networks and overlay services on a more level playing field. However, banks are subject to more regulations than non-traditional PSPs, which hinder their ability to innovate. By digitizing back-end and front-end processes, a banking and payments ecosystem can be developed whereby different financial services are offered across channels by a single bank. Banks looking to adopt immediate payments comprehensively will treat it as the core of their business strategies and alter their workflow processes in other supporting functions. Banks are the trusted providers of core financial services such as payments lending and investments, and they should continue offering these services in the digital space—not as single solutions—but as packaged offerings.

PATH FORWARD ON IMMEDIATE PAYMENTS TRANSFORMATION JOURNEY

A phased approach towards the implementation of immediate payments solutions will be crucial to the successful evolution of such payments.

There are a number of important factors to be considered when developing immediate payments solutions: messaging standards, overlay services, participation model, clearing and settlement mechanisms, degree of decentralization, and governance. Within each category, initiatives will move from basic services through to value-add, and then into the transformational stage (see Figure 3.7). For example, messaging standards have progressed from the standard SWIFT MT messages through to the ISO 20022 and XML standards, which are richer formats and enable more functionality. The transformational aspect of messaging standards will come with the blockchain messaging convention and PSD II enabling APIs, which will standardize the messaging format for the transaction processing systems. In the participation model, initially tier one and tier two banks will have access to immediate payments systems. Access will be gradually extended through dedicated external and bilateral schemes to ease entry for smaller PSPs. Moreover, RTGS and immediate clearing and settlement schemes might also converge, which could lead to instant settlement. Even countries with relatively mature immediate payments systems (such as the U.K.) have not yet entered the transformational stage.

Figure 3.7 Adopting Transformational Approach to Implement Immediate Payments



Source: Cappgemini Financial Services Analysis, 2015; SME Input; Vocalink Presentation at EACHA on Real-Time Payments in Europe, March, 2015

CONCLUSION

Banks are playing multiple roles to provide holistic payments services and thus differentiate their offerings from those of other providers. However, with payments instruments and advisory roles moving to near real time, banks’ payments infrastructures will need to further evolve.

Immediate payments can act as an enabler for the business growth of PSPs across multiple industries by accelerating transaction speeds, reducing risk and fraud, creating new revenue sources, reducing transaction costs, and reaching new markets. As described in the KRII analysis on page 30, regulators are taking an increasingly active role in encouraging the adoption of immediate payments globally by creating level playing fields on which banks and non-banks can compete.

The main benefit of immediate payments systems for banks is the prospect of meeting a customer need, using an infrastructure on which truly holistic

solutions can be built. All banks—and all PSPs—must evolve their business model and proposition development in order to keep pace with the ever-changing needs of the most important stakeholders of all—their customers.

Ultimately, a more strategic approach must be taken to strengthen banks’ portfolios with holistic solutions. Developing innovative solutions that span the payments value chain may be costly and complex, but nonetheless banks must find a way to deliver services that meet the payments needs of customers. In developing holistic solutions, banks must adapt to a changing technology landscape, with innovations such as blockchain technology offering opportunities to develop new propositions (see page 50).

To strengthen their product offerings, banks will have to continue to adopt an approach of continuous innovation, differentiating themselves from non-bank competitors.

REGULATORS PLAY A KEY ROLE IN THE SUCCESS OF IMMEDIATE PAYMENTS

REGULATORY OBJECTIVES

As we discussed earlier on page 38, we define immediate payments as 24/7 account-to-account (A2A) payment transfer services that facilitate immediate availability of funds to the beneficiary and instant confirmation of such availability within seconds. Immediate payments initiatives across the globe are in different phases of planning or implementation. The main regulatory objectives behind these initiatives, while united in a desire to enhance the payments proposition for consumers, vary across markets (see Figure 3.8).

In some countries (the U.K., Singapore, Sweden, Poland, Denmark, and Taiwan), regulators are initially focused on payments infrastructure modernization to foster innovation and convenience. Consumer protection was also an initial focus in the U.K., although of different nature from Chile, Nigeria, and Mexico where the use of cash can be dangerous. Financial inclusion is also a key objective for regulators in Nigeria, Mexico, Chile, India, Kenya, and Brazil. A significant percentage of the population in these countries do not have access to traditional instruments (particularly credit cards). In the two largest non-cash regions (the U.S. and Eurozone) where immediate payments schemes are being designed, the key objectives include convenience and competition with existing cards-based payments services.

OPERATIONAL CONSIDERATIONS

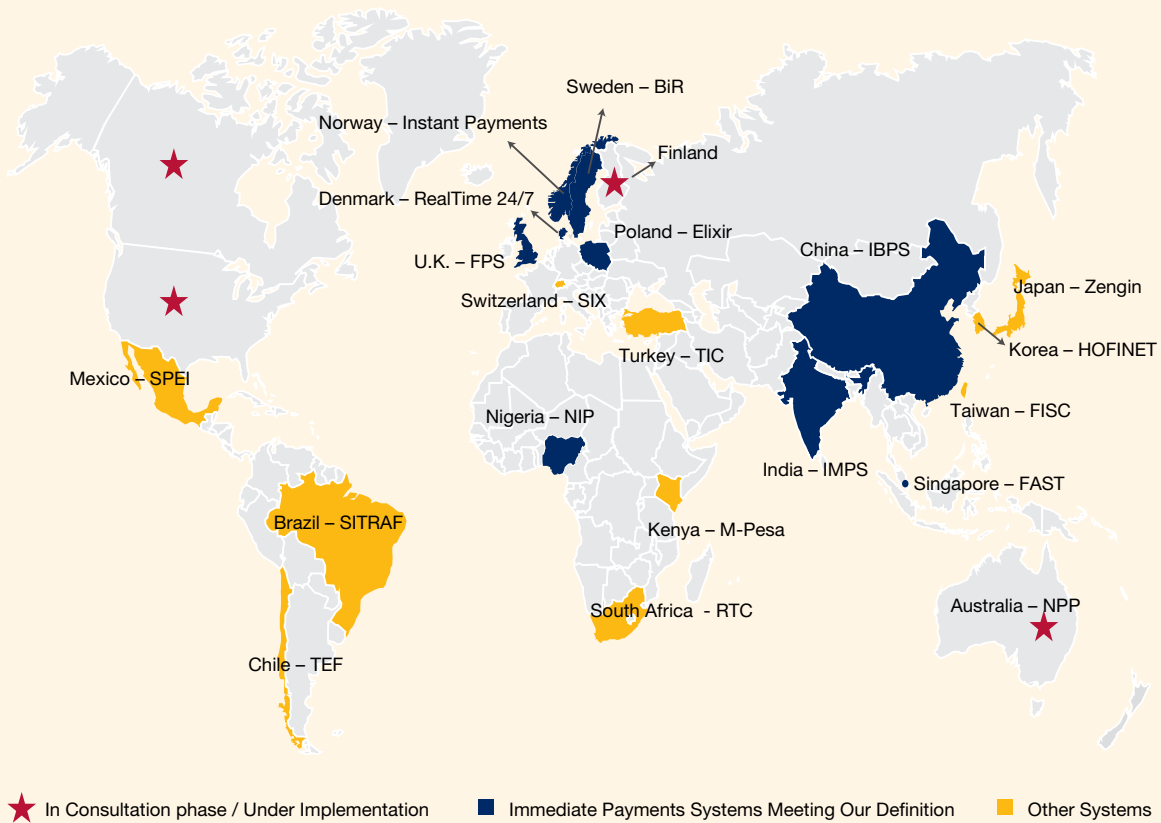
As the objectives of regulators guiding the implementation of immediate payments systems has varied across regions, so too has the approach taken by the industry to develop such systems. To date, three approaches have emerged across the globe to develop immediate payments-like systems: **leveraging existing RTGS systems**³⁶ (Switzerland, Mexico, and Chile), **building new infrastructure** (Australia Denmark, Singapore, Sweden, the U.K., India, and China), and **enhancing existing ACH infrastructure** for faster transaction clearing (Poland and Colombia). A fourth approach may emerge as the authorities in the U.S. are investigating the use of the existing ATM/PIN debit infrastructure with a real-time messaging network.

As regulators are taking different approaches towards the implementation of immediate payments (or RTGS-based systems that replicate some of the immediate payments benefits), the corresponding settlement mechanisms also vary. While RTGS-based systems do not distinguish between high- and low-value transactions they are not available 24/7 or on weekends. While a useful back-up solution, RTGS-based systems do not cover the complete needs of customers. Other non-RTGS systems provide 24/7 services with interactive clearing, where paying banks request confirmation and settlement through DNS (A net settlement system where final settlements occur between participating banks at the end of a predefined settlement cycle) or pre-funding arrangements. More recent systems such as Australia's NPP are hybrid models. In NPP, 24/7 services are expected to be made available with interactive bank-to-bank clearing and separate settlement via the Fast Settlement Service (FSS) of the central bank.

Based on lessons learned from previous implementations, the newer systems are being developed to cater for the future payments needs of consumers. In Europe, a proposed Euro instant payments system is aimed at providing real-time settlement as opposed to the existing D+1 settlement cycle of SEPA credit transfers (SCTs). It is envisaged that the systems will provide a business case for PSPs to develop a range of technology and business models for immediate payment and regulators will promote private sector participation in the system, hence encouraging greater competition.

36 We do not classify all RTGS systems as immediate payments systems since these do not meet our criteria as defined on page 38

Figure 3.8 Mapping of Immediate Payments Initiatives Across the Globe



Note: Kenya's M-PESA, although a basic mobile payment system, is a result of the regulatory mandate aiming at financial inclusion of the unbanked / underbanked and hence included in the cited category and Central Bank of Kenya deployed a new approach called lean regulation for the fulfillment of the system

Source: Capgemini Financial Services Analysis, 2015; Celent Report on Case Studies on Real-Time Payments around the World

CONDITIONS FOR SUCCESS

In order to ensure the success of an immediate payments system, multiple objectives must be managed for all stakeholders, including customers, supervisory bodies (including regulators, central banks, payments councils, and clearing house associations), financial institutions, and commercial organizations.

An examination of the role of regulators in various immediate payments initiatives across the globe reveals that they are key to the successful implementation of systems (see figure 3.9). Regulatory bodies have two key roles to play to drive successful implementation of immediate payments systems. These are: choosing an appropriate catalyst and ensuring holistic management of all related regulations.

As a catalyst, the exact role of a regulator can vary from mandator, collaborator or advisor. For example, when market participants struggle to establish a business case for immediate payments, the central authorities can step in and influence or drive stakeholders to adoption. In certain cases, success has been achieved with flexible regulatory models that adapt to changing market needs.

It is critical for regulators to take a holistic view of all regulations in order to help the proliferation of immediate payments. This would also include a focus on transaction settlement as the adoption and number of participating institutions (including non-banks) continues to grow.

Existing regulations are acting as a catalyst for immediate payments and helping them to reach a mature state. However, in parallel with immediate payments systems, regulators should focus on new areas, including virtual currencies, central bank services, and interoperability. Regulators' efforts should reflect the real-time world, especially in terms of intraday and cross-border settlement processes. An executive at a leading U.S. payments technology provider said: "We would like regulators

to be facilitators of a standard approach to ensure innovation, competitiveness, and interoperability. Also they should be a network of last resort to access the payment system". Immediate payments initiatives are not the sole preserve of regulators, however. Other sponsors or owners include non-bank PSPs, telcos, technology firms, and merchant consortia.

Figure 3.9 Role of Regulators in Driving Immediate Payments Adoption

Example of the Scheme / Country	Regulatory Role	Details
U.K.	Advisory initially to mandate at a later stage	<ul style="list-style-type: none"> Initially FPS, U.K. was designed and developed by the Payments Council with an objective to improve the efficiency of payments system The scheme did not witness expected levels of adoption and thus became very expensive to maintain All the banks were then mandated to participate in the scheme by transferring all the standing orders from BACS transactions to FPS
Sweden	Collaboration	<ul style="list-style-type: none"> BiR, Sweden's real-time payments network, was developed to support Swish, which is a collaborative initiative of six Swedish banks Swish is a mobile wallet that was developed by the banks to counter the stiff competition from local Swedish mobile wallet players Bankgirot, the infrastructure operator and Riksbank developed BiR collaboratively to support the banks' initiative
U.S.	Advisory	<ul style="list-style-type: none"> In 2014, The U.S. federal reserve released a public consultation paper seeking inputs for implementing such a system Four options are being contemplated currently including building an entirely new system, augmenting the existing ACH infrastructure, leveraging ATM/PIN debit infrastructure to enable credit push payments with real-time authorization, and using distributed architecture for messaging between financial institutions over public IP networks

Source: Capgemini Financial Services Analysis, 2015



BLOCKCHAIN OFFERS A DYNAMIC OPPORTUNITY

BLOCKCHAIN TECHNOLOGY IS EFFICIENT AND TRANSFORMATIONAL

Blockchain technology has the potential to improve the efficiency of financial transactions worldwide, and to transform the global financial network.

Each blockchain network is based on a unique cryptographic algorithm and protocol that allows secure and direct digital transfers of value and assets (such as money, contracts, and stocks, etc.), via open or closed networks that are backed by exchanges. While traditional ledgers are owned and maintained by one institution and access is restricted, a blockchain is hosted on a worldwide peer-to-peer network of computers (collectively known as miners). These miners verify and validate batches of user transactions via a mathematic, cryptographic process, and once verified, add this new block to the existing blockchain distributed ledger as a permanent database entry.

A unique cryptographic hash³⁷ and use of signing keys identifies each block and transaction, permanently fixing them in chronological order in the ledger. Due to the protocol of signing keys, every transaction for each block that has been executed within that protocol can be traced back through its history. This is very similar to the record-keeping systems employed by financial firms and therefore provides a robust audit trail. While additional and sequential records can be added to the ledger, no existing historic transactions can be changed or removed.

OPPORTUNITIES AND CONSIDERATIONS

A key feature of blockchain technology is the distributed ledger, which enables the participatory model of the blockchain. Banks could adopt this feature in place of some existing payments infrastructures. For example, there are potential benefits in real-time transactions in the cross-border domain, which could help to overcome some traditional correspondent banking inefficiencies.

Many industry participants have started to experiment with blockchain technology to pilot more contextual use cases, such as trade finance and cross-border payments. A few global banks have collaborated with financial technology firms to use the latter's blockchain ledger system for payments between subsidiaries, with the aim of lowering FX transfer costs and times.

Before blockchain technology moves to widespread usage, concerns about scalability, costs, and security need to be overcome. Validating a high volume of transactions will require exponentially more processing power at each participating block of the blockchain. There is an open question around whether the decentralized architecture can match

³⁷ A cryptographic hash is a function that essentially takes input data which can be of practically any size, and transforms it into a relatively compact string, in an effectively-impossible to reverse or to predict way. Making the slightest change to the input data changes its hash unpredictably, so nobody can create a different block of data that gives exactly the same hash.

the processing speed achieved through ACH. This could require significant investment from participants' servers. Also, for security the existing blockchain structure relies on advanced cryptography algorithms and the trust of participants, especially in public blockchains; although in private blockchains these requirements are less important. Increasing adoption of blockchain technology in payments will also increase the number of participants and value at risk. Across different adoptions of the technology it is yet to be determined if with larger transaction volumes blockchain technology will materially lower costs compared to legacy payment systems.

Three key blockchain features are: transparency, decentralized structure, and multi-signature. In terms of transparency network transactions can be traced by examining the blockchain. Also, the open ledger and collective verification of the transactions implies that each member of the network is aware of the processed transactions. In comparison to centralized systems, blockchain's decentralized structure reduces the probability of transaction execution failure. It is also less prone to financial fraud particularly in the event of a breach of any of the participant's networks. The multi-signature features can be used

by an organization to receive, validate, approve, and authorize funds transfer requests, giving more control over the management of intraday liquidity. To achieve full value, stakeholders would benefit from a set of common standards, which would facilitate interoperability.

FUTURE OUTLOOK

The financial industry recognizes the potential of blockchain technology to fundamentally change the way the industry operates, with a strong use case for payments. This technology could accelerate the velocity of money, and provide a path for legacy banking systems to interoperate, greatly improving efficiency. Blockchain technology has attracted interest from central banks, financial institutions and technology firms, who are investigating the opportunities and challenges in using the technology.



Closing Thoughts

The payments market continues to evolve at pace. The sharp increase in the number of non-cash transactions, regulatory drivers, and new technology make it an exciting time for clients and market participants.

Examining and analyzing non-cash transaction volumes as we have done in WPR can shed light on the wider economic picture globally. Non-cash transaction volumes mirror what is happening in individual economies. China, for example, continues its move up the non-cash payments league, expected to reach fourth position behind the U.S., Eurozone, and Brazil in 2014.

Regulatory intervention has helped to boost volumes: during 2012–2013 Russia grew by 33.4% thanks to the opening up of the banking industry to private investors, which resulted in numerous initiatives including improved financial literacy and programs to reduce the use of cash.

The analysis of non-cash transaction volumes must now take into account the steadily growing hidden payments market. Our figures for 2014 indicate that the market share of hidden payments is now too big to ignore: transaction volumes are estimated to have reached 24.5–40.9 billion. The growth of the hidden payments market poses concerns regarding data privacy, and information security for all stakeholders in the payments industry: banks, non-banks, customers, and regulators.

The non-cash story is not solely about growth rates, however. There are also opportunities associated with innovation and competition that will help banks to remain relevant in an increasingly competitive payments industry. Regulators are focusing on widening access to payments systems, which should encourage innovation as new participants enter the markets and traditional providers respond to this competition.

The drive for standardization and sophistication continues to shape the market. Examples include the adoption of the ISO 20022 message standard, which will help to harmonize payment systems, making them interoperable across regions. This will benefit not only PSPs, but also PSUs. The promotion of common standards will help third parties to develop common apps and APIs that can be used by banks and non-banks alike. Such apps will enable PSPs to develop innovative products beneficial to PSUs.

Complying with the growing number of KRIs that cascade from regional into global initiatives can be challenging for PSPs. However, with these challenges come exciting opportunities particularly in the area of immediate payments, which have and will continue to radically change the payments landscape.

Immediate payments are expected to continue to have a profound impact on the origination, processing, and reporting elements of PSPs. Such payments will also influence the pricing, features/options, and security of products. For PSUs, immediate payments can deliver greater price transparency, faster transaction times, a safer payments environment, and enhanced user experience.

In this rapidly evolving payments marketplace, differentiation for banks will increasingly rely on their ability to provide truly holistic offerings to meet customer demands. Their strategy to compete with non-banks will be based on a transformational approach to their business cases and business models, underpinned by new technology platforms such as immediate payments and blockchain.

The ongoing technological innovations are expected to give rise to more disruptions in the payments industry in the near future. A focus on client needs, operational agility, and co-operation with industry players and regulators will remain the key success factors for firms.

Methodology

NON-CASH PAYMENTS

This year's World Payments Report offers insights on the payments markets in the following geographical areas:

- North America: Canada, and the U.S.
- Europe:
 - Fourteen Eurozone countries: The 13 countries that were members of the Eurozone in 2007: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Slovenia, and Spain, plus Slovakia, which joined the Eurozone in 2009. (Cyprus and Malta, which joined in 2008, Estonia in 2011, Latvia in 2014, and Lithuania in 2015 are not the part of WPR 2015 non-cash transaction analysis).
 - Four non-Eurozone countries: Denmark, Sweden, Switzerland, and the U.K.
- Mature Asia-Pacific: Australia, Japan, Singapore, and South Korea.
- Emerging Asia: China, Hong Kong, India, and other Asian markets.
- Latin America: Brazil, Mexico, and other Latin American markets.
- CEMEA includes Poland, Russia, Saudi Arabia, South Africa, Turkey, Ukraine, Hungary, Czech Republic, Romania, and other Central European and Middle Eastern markets.

Data for Australia, Brazil, Canada, China, Hong Kong, India, Japan, Mexico, Russia, Saudi Arabia, Singapore, South Africa, South Korea, Turkey, and the U.S. were taken from the latest Bank for International Settlements (BIS) payment statistics Red Book (2013 data released December 2014). Data for Europe, Romania, Czech Republic, Hungary, and Poland were taken from the ECB Statistical Data Warehouse (2013 data released September 2014). For the remaining countries, data were taken from central bank publications and websites. Macroeconomic indicators (gross domestic product and population) were collected from the World Bank.

Total non-cash transactions is the sum of check, debit card, credit card, credit transfer, and direct debit transactions. Due to the numerous revisions in official data made by the sources, along with changes in reporting methodology by various countries, data for previous years may diverge from data initially reported in WPR 2014. Wherever data was unavailable or substantially different, data were estimated on a linear basis. There were no major changes in methodology, and for all other countries, we used the latest data published, even if restated for previous years.

Because of lack of reliable historical data trends, data for some countries have been estimated and grouped under the appropriate regional heading: other Asian countries, other Latin American countries, or other CEMEA countries. We have fine-tuned our model to make our estimates more robust, however there were no major changes to the methodology:

- Other CEMEA countries now include Bulgaria, Croatia, Kenya, Nigeria, Egypt, Israel, and UAE.
- Other Latin American countries now include Argentina, Colombia, Venezuela, Chile, Peru, Uruguay, Costa Rica, Bolivia, and Paraguay.
- Other Asian countries now include Malaysia, Thailand, Indonesia, Philippines, Taiwan, Pakistan, Sri Lanka, and Bangladesh.

For worldwide macro descriptive graphs (number of transactions per region), six regions were defined: Europe without Russia and Poland, North America, Mature Asia-Pacific (Japan, Australia, South Korea, Singapore), Emerging Asia (China, Hong Kong, India, other Asian markets), Latin America, and CEMEA, grouped by geographic, economic, and non-cash payment market maturity criteria.

2014 NON-CASH TRANSACTIONS ESTIMATIONS

The non-cash transactions estimations for 2014 were calculated using our forecast model, which has been further enhanced since WPR 2014 as part of our ongoing improvements to size up-to-date trends for our readers, despite the delays in publication of official data. The model is bottom-up, and takes into account factors such as historical growth rates of non-cash instruments at a country level, the local regulatory environment, and certain macroeconomic factors that can affect the growth of non-cash payments in a region. Also, while most markets have not published actual 2014 numbers at the time of going to print, we have carried out sense-checks with available 2014 numbers that were released in Q2 2015 in order to further validate our estimates.

HIDDEN PAYMENTS MARKET ESTIMATION

Industry estimate for the overall size of the hidden payments market is derived from various industry and analyst reports. For estimating the transaction volumes of each key category, we have analyzed the data from leading market players. Our model first estimates the market share of leading players for each category and further estimates the percentage of transactions that are not statistically reported under traditional payments instruments. We have further performed scenario analysis to estimate the lower and higher range of hidden payments transaction volumes for each category.

WPR 2015 ONLINE SURVEY

Our primary research for WPR 2015 included an online survey (in addition to executive interviews) that was distributed to industry participants across banks, non-bank FSIs, IT and advisory firms (sample size, 411) in May 2015. Findings from the survey have been incorporated in our analysis throughout the report.

Glossary

A2A

Account-to-Account transfer of funds including retail and corporate accounts with banks and financial institutions

ACH

Automated clearing house

AIS

Account information services, a service provider category under PSD II

AML / ATF

Anti-money laundering/Anti-terrorist financing

APAC

Asia-Pacific

API

Application programming interface

ATM

Automated teller machine

B2B / B2C

Business-to-business /
Business-to-consumer

BACS (U.K.)

Bankers' Automated Clearing Services

BCBS

Basel Committee for Banking Supervision

BIS

Bank for International Settlements

BPO

Bank Payment Obligation is an irrevocable undertaking given by a bank to another bank that payment will be made on a specified date after successful electronic matching of data according to an industry-wide set of ICC rules

BRIC

Refers collectively to the countries of Brazil, Russia, India, and China

CAGR

Compound annual growth rate

C2B

Consumer-to-business

CEMEA

Central Europe, Middle-East, Africa

CEPAS

Contactless e-Purse Application

CHAPS

Clearing House Automated Payments System (U.K.)

CIPS

China International Payment System

CPSS

Committee on Payment and Settlement Systems

CRD IV

Capital Requirements Directive

CSM

Clearing and settlement mechanisms

DNS

Deferred Net Settlement

EBPP

Electronic bill presentments and payments

EBA

European Banking Authority

EBA Clearing

Bank-owned provider of pan-European payment infrastructure solutions

EC

European Commission

ECB

European Central Bank

ESBG

European Savings and Retail Bank Group

e-government

The use of information and communication technology by governments to inform and render services to citizens and businesses

EMV standard

Europay, MasterCard, Visa, a global security standard for cards, POS and ATM terminals in relation to credit and debit card payments

EPC

European Payments Council

ERPB

Euro Retail Payments Board

e-SEPA

Services that make use of advanced information and communication technology when offering pre-payment, payment and/or post-payment services within the SEPA framework

ESMA

European Securities and Markets Authority

EU

European Union of 28 members

Eurozone

The Eurozone comprises the member states of the EU that have adopted the euro as their national currency. Eurozone data in the first Section of this report covers the 13 countries that were members in 2007–Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Spain, and Slovenia. Since then, Cyprus, Malta, Slovakia, Estonia, Latvia, and Lithuania have also joined, bringing the number of Eurozone members to 19 as of 2015

FAST

Fast and Secure Transfers scheme (Singapore)

FATCA

U.S. Foreign Account Tax Compliance Act, a U.S. Government move to improve tax compliance involving foreign financial assets and offshore accounts

FI

Financial institution

FinCEN

Financial Crimes Enforcement Network

FSI

Financial services institution

FPS

U.K.'s Faster Payments Scheme enables participants to exchange payment information in quasi real-time, and clears and settles several times intraday

FTT

Financial transaction tax

FX

Foreign exchange

GDP

Gross domestic product

IMPS (India)

Immediate payments system

IOSCO

International Organization of Securities Commissions

ISO 20022

The ISO message scheme used by SEPA instruments and others

KRIIs

Key regulatory and industry initiatives

KYC

Know your customer

Legacy payments

Domestic payment instruments that pre-date SEPA

M-Payments

Form of payment where the mobile phone is used as a payment mode—not just as an alternative channel to send the payment instruction—and the payment information flow takes place in real time

Mandate

In payments, the mandate is the authorization required

MAS

Monetary Authority of Singapore

MIF

Multilateral interchange fee is paid by a retailer's bank to the consumer's bank for every card payment

MPOS

Mobile point of sale

NBFC

Non-bank finance companies

NFC

Near-field communications (short-range wireless technology) used for contactless payments

Non-Cash Payments

Payments made with instruments other than notes and coins, i.e., using credit transfers, direct debits, credit or debit cards or checks

NPCI

National Payments Corporation of India

NPP

New Payments Platform (Australia)

P2P/P2M

Person-to-person/Person-to-merchant

PEACH

Pan-European automated clearing house

PIS

Payment initiation service is a service provider category under PSD II

PIN

Personal identification number

POS

Point-of-sale

PSD II

Payment Services Directive II

PSP /PSU

Payment service provider/Payment service user

PSR (U.K.)

Payments Systems Regulator

RBI

Reserve Bank of India

Red Book

An official publication of the BIS

RTGS

Real-time gross settlement

SCT

SEPA credit transfer

SDD

SEPA direct debit

SEPA

The Single Euro Payments Area is a domain in which the EU28 and 3 EEA associated countries are standardizing all euro payments and collections so they can be treated as domestic transactions

SWIFT

Society for Worldwide Interbank Financial Telecommunication

TARGET

Trans-European Automated Real-Time Gross Settlement

TPPP

Third-party payments provider

XML

Extensible markup language

XS2A

Access to accounts element of PSD II includes plans for introducing new rules designed to provide access to payment account information to third parties

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