

World Payments

REPORT **2011**



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Preface

Now in its seventh year, the *World Payments Report* (WPR) from Capgemini, The Royal Bank of Scotland (RBS), and Efma looks at how the global payments landscape is responding to shifts in economic and competitive conditions, advances in technology, increased regulatory pressure, and evolving customer demands.

Payments have weathered the economic crisis well: the volume of non-cash payments globally continued to grow in 2009, albeit at a more modest pace than in recent years. Initial data suggests the growth in volumes picked up again in 2010, but several external and internal factors are driving banks and forcing transformation in the industry.

The *World Payments Report 2011* looks first at the global and regional trends in payments volumes; then outlines the potential effects of various regulations and industry initiatives on payments; before exploring how those trends are driving industry transformation.

Along the way, the WPR also spotlights a range of topical issues, including the declining use of checks, the progress of the Single Euro Payments Area (SEPA), the relationship between eGovernment initiatives and non-cash payments, and the key role that mobile payments, and innovation in general, will continue to play in the future of the industry.

In exploring the future shape of the payments landscape, we consider how other network industries have evolved, noting for example how deregulation and commoditization in the Energy and Telecommunications sectors have transformed the value chains of those industries. These examples should provide food-for-thought for banks and payment service providers (PSPs), which in due course may need to rethink their own business models in much the same way as participants in those sectors have had to.

We conclude by looking at how banks need to prepare for potentially radical shifts in the longer-term by devising strategies for future flexibility and by differentiating and proving their value through innovation.

We hope this year's report provides useful insights.



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Summary of Key Findings

The global volume of non-cash payments has continued to grow, and payments have proved resilient to the effects of the financial crisis. Macroeconomic weakness decreased the rate of growth in non-cash payments volumes in 2008-09, but initial data suggests volumes resumed a higher growth rate in 2010. Nevertheless, the payments industry is under pressure to evolve, due to both exogenous and endogenous forces, and key regulatory and industry initiatives are converging to drive change far into the future.

The *World Payments Report 2011* explores the trends in payments volumes and instruments usage, the payments-related regulatory and industry initiatives that are driving change in the payments landscape, and the consequent strategic challenges and options for banks.

The key findings of this report include the following:

- **The global volume of non-cash payments transactions (using direct debits, credit transfers, cards and checks) grew by 5% in 2009 to 260 billion.** The global use of such instruments, which expanded at a compound annual rate of 6.8% in 2001-09, has proved resilient to the effects of the financial crisis. Nevertheless, macroeconomic weakness did restrain the rate of growth, as the pre-crisis 2001-07 annual growth rate had been 7.2%. Moreover, in 2009, non-cash transaction volumes rose just 1.8% in North America and 4.7% in Europe, but considerably more (10.1%) in Mature Asia-Pacific.¹
- **Initial data suggests the growth in global payments picked up again in 2010,** with transaction volumes rising at an estimated 7.8%, again driven by emerging markets and Mature Asia-Pacific. Non-cash payments are expected to show growth of 37% in CEMEA (Central Europe, Middle East, Africa), 23% in Rest of Asia (excluding China and India), 14% in BRIC (Brazil, Russia, India, and China), and 14% in Mature Asia-Pacific. In developed Europe and North America, non-cash payments seem likely to have grown less rapidly but still faster than in 2009.
- **The use of credit and debit cards continued to grow in most markets in 2009 and global transaction volumes were up 9.7%.** Cards remain the preferred non-cash payment instrument globally, with a market share of more than 40% in most markets and a high of 68% in Canada. At the same time, the average value per card transaction is decreasing in most markets. In the U.S., for example, volumes rose 5% while the average value per transaction dropped to €40 from €43.
- **Check usage continued to decline across the globe in 2009,** and accounted for 16% of all non-cash global transactions in 2009, down from 22% in 2005. This is a clear indicator of the global shift toward electronic payments.
- **Europe continues to incur significant costs from rising euro cash-in-circulation.** The ratio of cash over gross domestic product (GDP) in the Eurozone is more than twice that of the U.S. If the Eurozone could reduce cash usage, even accounting for the inefficiencies created by fragmentation, it could save approximately €20 billion per year, just through the proportional reduction in euro cash-handling costs, and would probably improve tax transparency.
- **E-payments and m-payments collectively accounted for an estimated 22.5 billion transactions in 2010.** E-payments (online payments for e-commerce activities) are expected to grow globally to 30.3 billion transactions from 17.9 (in 2010-13), while m-payments are expected to grow globally to 15.3 billion transactions from 4.6 billion in the same period.
- **Key Regulatory and Industry Initiatives (KRIs) are driving five main industry transformation trends (ITTs),** which are reworking—or soon will—aspects of the payments market and the positioning of participants. Those trends are:

¹ Mature Asia-Pacific comprises Australia, Japan, Singapore and South Korea.

- **Systemic-risk reduction and control.** In the wake of the financial crisis, regulators are seeking to minimize systemic risk by asking for stricter requirements on capital and liquidity, but there is potential for unintended consequences, especially for certain business lines.
- **Standardization** initiatives continue to improve efficiency, streamline processes and reduce costs. Some payments instruments and/or aspects of the value chain are becoming commoditized in the process, making it more difficult for banks to differentiate themselves.
- A drive for higher levels of **Transparency** is increasingly being seen in the payments industry overall and in the cards business in particular. Several initiatives are focusing on making service fees to both corporate and retail clients more transparent, and this is likely to have implications for current business models.
- **Convergence.** Developments in technology and evolving user and regulatory requirements are contributing to a gradual blurring of the lines between traditional payments activities supplied by infrastructure providers, potentially increasing competition between Real-Time Gross Settlement (RTGS) and Automated Clearing Houses (ACHs) for certain types of low-value payments.
- **Innovation** allows players to specialize and to make use of emerging technologies and trends, such as mobile devices and contactless payments, to deliver state-of-the-art solutions. Non-bank PSPs may be better placed than many banks to leverage emerging technologies to create user needs.
- **Single Euro Payments Area (SEPA)** adoption has increased in the last year in terms of SEPA Credit Transfers (SCT). However, SEPA Direct Debit (SDD) use is still developing. All stakeholders are agreed on the need for a firm end-date for migrating to SEPA, and the EU has proposed February 2013 for CTs and February 2014 for DDs. Final agreement on an EU Regulation designed to set firm end-dates is expected by the end of 2011.
- **eGovernment initiatives are emerging as a key enabler of non-cash payments.** In countries where a mature eGovernment combines with developed non-cash payments infrastructure and behavior, conditions are especially ripe for eGovernment payments to spur overall non-cash payments usage. This may have a knock-on effect in areas of the market still relying on dated technologies.
- **Market conditions and trends are driving standardization in the payments landscape, increasing commoditization in most payments instruments.** In this environment, the imperative for banks and PSPs is to distinguish their propositions and prove their value through specialization.
 - **The Energy and the Telecom industries have strong similarities to payments—and offer lessons learned—in that their basic products are commodities that are difficult to differentiate.** Energy and Telecoms have also both been pressured by regulation, competition and technological innovations. In both cases, this pressure has resulted in a disaggregation of the value chain and a clear polarization of the production and distribution ends of the underlying product/service.
 - **A similar disaggregation of the value chain could also take place in the payments industry, leading to clear business specialization:** For example, production requiring operational excellence, volume scale, and cost leadership; and distribution hinging on customer intimacy, understanding the business and client needs, and the ability to build a distinctive set of products and services.
 - **In the mid-to-long term, many PSPs could evolve into one of two specialist roles—Wholesale Payments Providers (WPPs) or Retail Payment Services Providers (RPSPs)—**since few are likely to have the scale, capabilities, strategic ambition or will to pursue both ends of the value chain as it disaggregates.
 - **Banks need to understand the role they will likely play in the longer-term** and prepare for any potentially radical shifts. Evolving into a WPP, playing the RPSP role, or preparing to assume both roles requires vision and imposes strategic decisions. Meanwhile, innovation remains vital for banks and PSPs as it allows them to differentiate their propositions and prove their value. Many players will need to stretch beyond their traditional roles when positioning for longer-term success, even if shorter-term opportunities lie firmly in their grasp.



1

World Non-Cash Markets and Trends

HIGHLIGHTS

- **The global volume of non-cash payments transactions grew by 5% in 2009 to 260 billion.** The global use of such instruments, which expanded at a compound annual rate of 6.8% during 2001-09, has proved resilient to the effects of the financial crisis. Nevertheless, macroeconomic weakness did restrain the rate of growth, as the pre-crisis 2001-07 annual growth rate had been 7.2%. Moreover, in 2009, non-cash transaction volumes rose just 1.8% in North America and 4.7% in Europe, but considerably more (10.1%) in Mature Asia-Pacific.
- **The volume of non-cash payments continued to grow quickly in developing economies in 2009.** Usage rose 22.0% in CEMEA (Central Europe, Middle East, Africa), 15.4% in Latin America excluding Brazil, and 11.1% in the Rest of Asia. In the BRIC (Brazil, Russia, India, China) countries, non-cash transaction volumes gained 8.6% in 2009, a slower pace than in recent years, but BRIC has nevertheless showed a sustained gain in usage (12.4% a year in 2001-09), fueled by the growing use of cards.
- **The U.S. remained by far the largest non-cash payments market in the world in 2009,** accounting for more than 40% of the global total in 2009. Individuals in the U.S. are also the most frequent users of non-cash payments instruments in the world. **The Eurozone remained the next largest payments market,** with over 21% of the total. Together, North America, Europe, and Mature Asia-Pacific accounted for a combined 83% of non-cash payments volumes in 2009.
- **The use of cards (credit and debit) continued to grow in most markets in 2009 and global transaction volumes were up 9.7%.** Cards remain the preferred non-cash payment instrument globally, with a market share of more than 40% in most markets and a high of 68% in Canada. Also, the average value per card transaction is decreasing in most markets. In the U.S., for example, volumes rose 5% while the average value per transaction dropped to €40 from €43.
- **Check usage continued to decline across the globe** and accounted for 16% of all non-cash global transactions in 2009, down from 22% in 2005. This is a clear indicator of the global shift toward electronic payments. Several European economies have already decommissioned the use of checks.
- **Europe continues to incur huge costs from rising euro cash-in-circulation.** The ratio of cash over GDP in the Eurozone is more than twice that of the U.S. If the Eurozone could have reduced this ratio to U.S. levels in 2009, even accounting for the inefficiencies created by Eurozone fragmentation, it could have saved around €18 billion-€21 billion per year just through the proportional reduction in euro cash-handling costs, as well as improved tax transparency.
- **Initial data suggests the growth in global payments picked up again in 2010,** with transaction volumes rising at an estimated 7.8%, again driven by emerging markets and Mature Asia-Pacific and, in particular, by the growing use of cards in those markets. Non-cash payments are expected to show growth of 37% in CEMEA, 23% in Rest of Asia (excluding China and India), 14% in BRIC, and 14% in Mature Asia-Pacific. In developed Europe and North America, indications are that the growth in non-cash payments is also greater than in 2009.
- **Trade finance** demand is expanding as exports increase. Exports were 24% higher at the end of 2010 than at the beginning of 2009, with Asian trade flows rebounding more strongly than those of most developed economies. **Workers' remittances** were hit hard by the crisis and global volumes contracted 5% in 2009, with remittances to Europe and Central Asia sinking 23%. However, remittances appear to have resumed growth in 2010, albeit at a slower pace (6%) than pre-crisis.
- **E-payments and m-payments collectively accounted for an estimated 22.5 billion transactions in 2010.** E-payments (online payments for e-commerce activities) are expected to grow globally from 17.9 to 30.3 billion transactions (between 2010 and 2013), while m-payments are expected to grow globally from 4.6 to 15.3 billion transactions in the same period.

Non-Cash Payments Continue to Grow

GLOBAL USE OF NON-CASH PAYMENTS GREW AGAIN IN 2009, BUT AT A MORE MODEST PACE

The global volume of non-cash transactions totaled 260 billion² in 2009, after sustained average annual gains of 6.8% since 2001 (see Figure 1.1). Global payments volumes have proved resilient to the effects of the global financial crisis, but the rate of growth has been constrained by tough economic conditions, with volumes showing an increase of 5% in 2009, down from an average annual gain of 7.2% in the years prior to the crisis (2001-07). As for the two largest payments markets, non-cash transaction volumes in North America (U.S. and Canada) rose just 1.8% in 2009, and volumes in Europe³ rose 4.7%.

The outright volume of non-cash payments remains heavily concentrated in developed markets, with North America, Europe and Mature Asia-Pacific accounting for a combined 83% of non-cash payments volumes in 2009, and with 89% of global volumes concentrated in ten⁴ payments markets.

While the pace of growth in many developed markets has been restrained by the slowdown in economic activity, usage jumped 10.1% in Mature Asia-Pacific. Gains were robust in South Korea and Singapore, where economic growth has remained strong and technology adoption has helped to drive non-cash payment innovations and usage. In Japan, volumes jumped 12.6%, the highest rate of growth among the mature payments markets, fueled by pervasive card usage.

In developing markets, the increase in volumes remained strong in 2009—up 22.0% in CEMEA and 15.4% in Latin America excluding Brazil. Emerging markets such as these are improving their payments infrastructures, enabling wider adoption and greater usage of non-cash means and channels. They also tend to be open to innovations that can broaden their still-nascent base of users. In the BRIC countries, non-cash transaction volumes rose 8.6% in 2009, a slower pace than in recent years.

Nevertheless, BRIC has shown a sustained gain in usage of 12.4% a year from 2001 through 2009 (see Figure 1.2). During that time, there has also been a tangible shift in the mix of payments instruments, with cards accounting for 38% of all BRIC non-cash payments in 2009, up from just 14% in 2001.

In fact, cards have accounted for a consistently increasing share of non-cash transactions in every region in recent years. In North America, for instance, cards accounted for 59% of all non-cash transactions in 2009, up from 38% in 2001⁵. The global growth of card usage has coincided with a steady decline in check usage, a slight increase in the number of direct debits across all regions, and minimal change in the use of credit transfers.

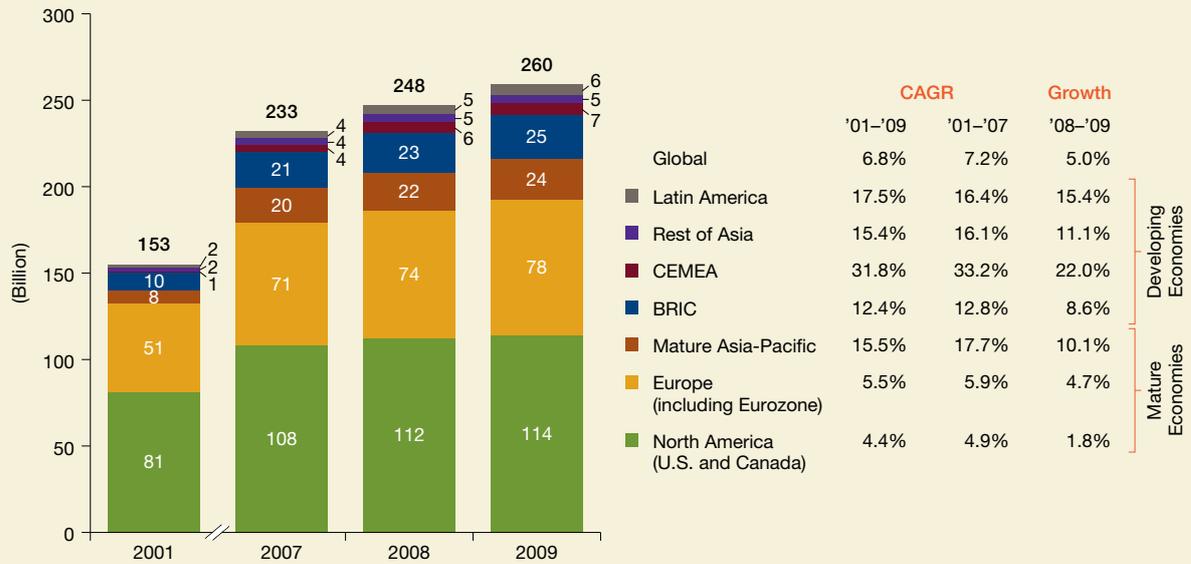
² Transaction volumes cited in the WPR 2011 differ in some respects from those provided in previous years as certain data has been normalized to provide more accurate comparisons between regional datasets (see methodology). Also note the WPR data does not include prepaid card transactions, which are included in some official country datasets, notably the U.S. and Canada, where such usage is well-developed (also see footnote 5).

³ Europe data includes the Eurozone, U.K., Sweden, Poland, and Denmark. In this chapter, Eurozone includes: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Slovenia, and Spain. (Cyprus and Malta joined in 2008, Slovakia in 2009, and Estonia in 2011). Also see methodology.

⁴ The top ten non-cash payments markets, in order of size, are the U.S., Eurozone, U.K., Brazil, South Korea, Canada, Japan, Australia, China, and Russia.

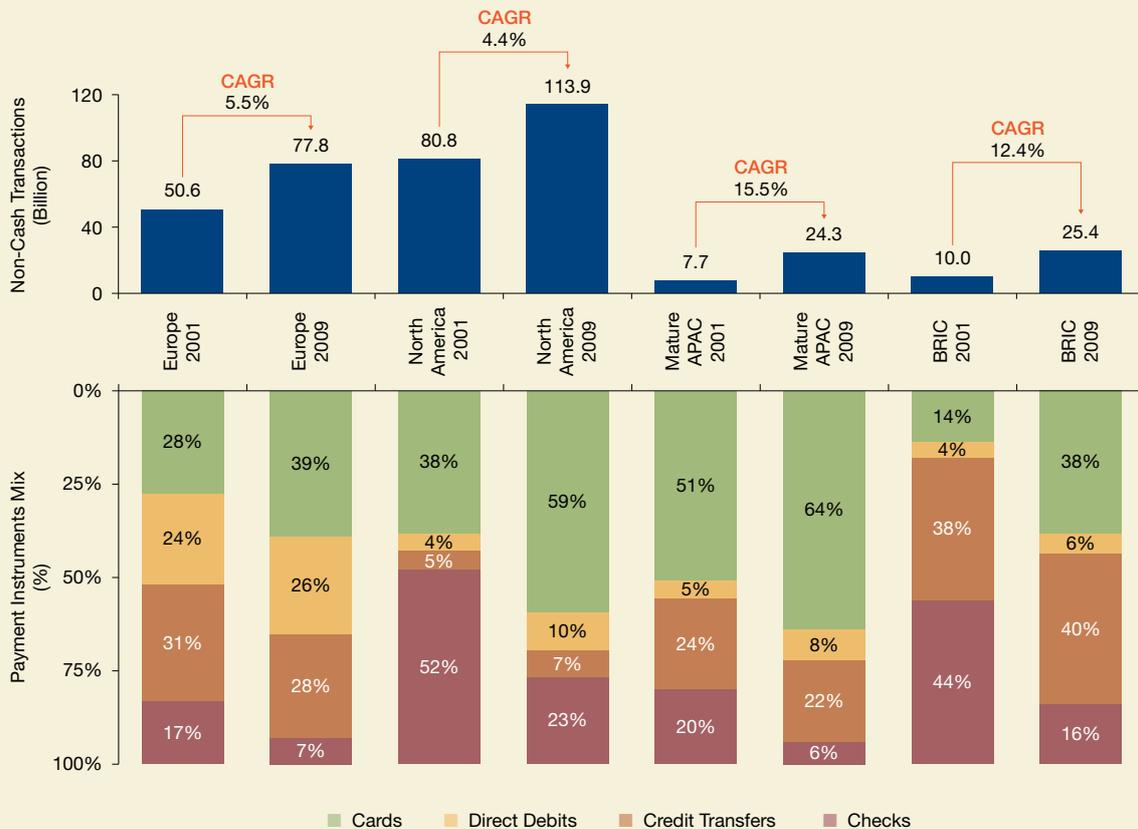
⁵ To ensure consistency and accuracy in regional comparisons, WPR cards data does not include prepaid card transactions—numbers that are included in some country data. The U.S. Federal Reserve, for example, reports there were 6 billion prepaid card transactions in 2009 and that prepaid usage has risen 21.5% annually since 2006. These transactions involve private label, general purpose, and EBT cards (which store electronic benefit transfers to federal aid recipients). These and other country prepaid totals are not included in WPR data as the majority of countries in the WPR study scope do not report this data in the same way.

Figure 1.1 Number of Non-Cash Transactions by Region (Billion), 2001, 2007-2009



Note: CEMEA (Central Europe, Middle East, Africa) does not include South Africa; Mature Asia-Pacific comprises Australia, Japan, Singapore, and South Korea; Latin America does not include Brazil; BRIC comprises Brazil, Russia, India, China; China data has been restated to remove ATM card transactions. Chart numbers and quoted percentages may not add up due to rounding
Source: Capgemini analysis, 2011; European Central Bank Data Warehouse (ECB DWH)—2009 figures, November 2010; Bank for International Settlements - Red Book - 2009 figures, December 2010; 2010 Federal Reserve Payments Study, April 2011

Figure 1.2 Comparison of Non-Cash Transactions by Region (Billion) and Change in Payment Instruments Mix (%), 2001 vs. 2009



Note: Mature Asia-Pacific (APAC) data for 2001 excludes a) South Korea cards (for which no data was available), b) Japan data for direct debits for all years. As a result, the net growth rate in those instruments may be somewhat smaller than shown. Cards data does not include prepaid card transactions. Chart numbers and quoted percentages may not add up due to rounding
Source: Capgemini analysis, 2011; ECB DWH—2009 figures, November 2010; Bank for International Settlements - Red Book - 2009 figures, December 2010; 2010 Federal Reserve Payments Study, April 2011

Regionally, BRIC stands out as the least homogenous as it covers four very different and separate markets: there are important differences between these countries in terms of payment instruments, as well as culture and economic conditions. Therefore, it is interesting to look at each country individually (see Figure 1.3):

- **Brazil** is the largest and most mature of the BRIC payments markets. Overall growth in non-cash payments volumes has been more gradual than in some emerging markets but substantial nonetheless (up 9.3% a year in 2001-09), with cards being an important driver (along with credit transfers). Economic and payments markets continued to expand in Brazil throughout the global financial crisis. Brazil's payment market is as big as the largest markets in Europe, with comparable usage-per-inhabitant averages.
- **Russia** has seen card usage increase to 24% of all transactions in 2009 from just 3% in 2001, reducing the dominance of credit transfers (whose market share dropped from 95% in 2001 to 71% in 2009). Nevertheless, the growth potential remains high for non-cash payment instruments, and for cards in particular.
- **India** is currently ranked as the 11th largest non-cash payments market after Russia, and has established the National Payments Corporation of India (NPCI) to spearhead the development of cheap and efficient electronic payment instruments (mobile payments, cards) and develop appropriate infrastructures. The long-time reliance on checks in the Business-to-Business (B2B) sphere has kept check usage high, but it is declining (to 65% of all transactions in 2009 from 93% in 2001). The market share of cards has increased during that time (from 6% to 19%).
- **China** has seen card usage surge from 12% of the payments mix in 2001 to 65% in 2009, with the main driver of the 20.8% annual growth during that time related to cards managed by the single and central ChinaUnionPay (CUP) scheme. Usage of checks declined during that time, but cash is still used heavily for retail payments in China—as it is in India and Russia.

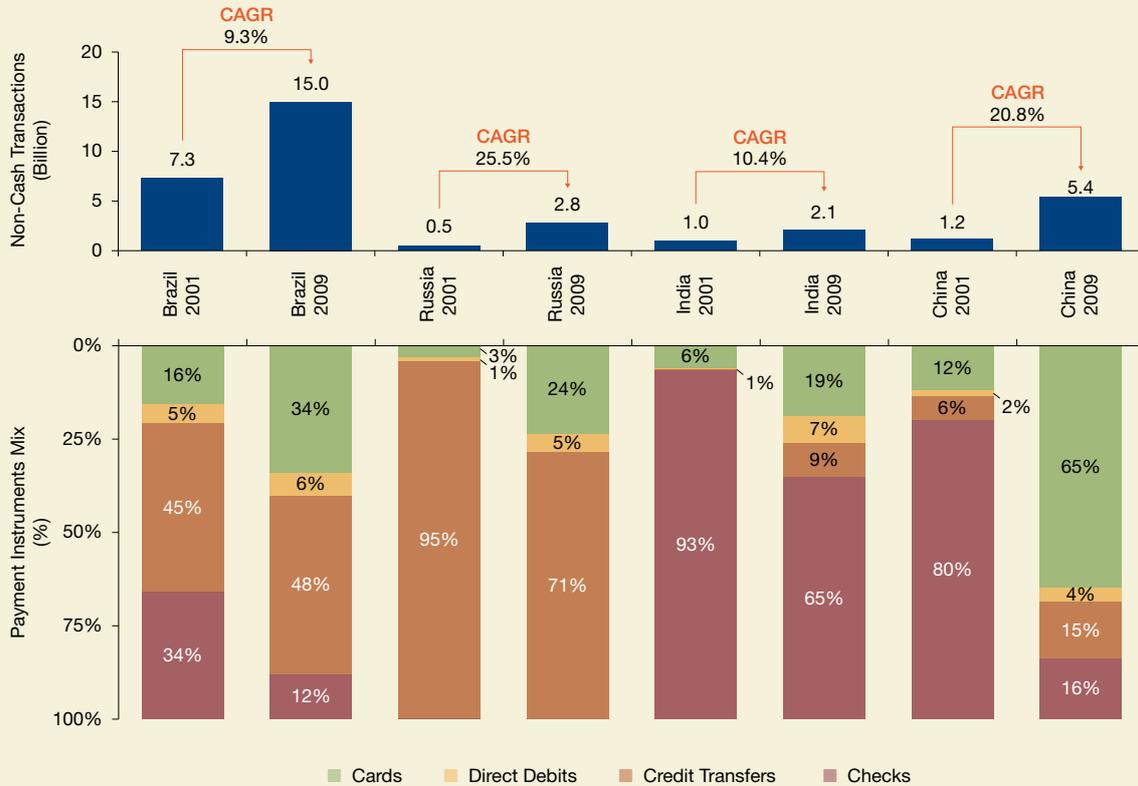
PREFERENCES AND ADOPTION OF NON-CASH INSTRUMENTS STILL VARY BY MARKET

Non-cash payments trends and preferences still vary considerably by market, depending on factors such as the availability and maturity of various instruments and the adoption rates among retail, business and public-sector stakeholders. In 2008-09, macroeconomic conditions also played a role in constraining the growth of certain payments markets, though non-cash payments as a whole continue to expand each year. Among the notable trends in world payments markets in 2009:

- **The U.S. remained by far the largest non-cash payments market in the world**, accounting for 104.4 billion non-cash payments transactions, more than 40% of the global total in 2009. While the U.S. market posted cumulative growth of 4.8% a year in 2001-07, the volume of transaction growth slowed as the U.S. economy languished due to the financial crisis. As a result, non-cash payments grew 2.8% a year in 2007-09 and just under 1.8% in 2009. The U.S. remains the most important check market worldwide, with 24.3% of all non-cash transactions coming from checks. Still, individuals in the U.S. are the most frequent users of non-cash payments instruments in the world, averaging 340 transactions per inhabitant in 2009. Of all U.S. non-cash payments in 2009, 58% were made using cards⁶.
- **The Eurozone remained the next largest payments market**, with 55.8 billion transactions or more than 21% of the total in 2009. Across Europe as a whole, France, Germany, and the U.K. are still the largest non-cash payments markets, each accounting for more than 15 billion non-cash transactions in 2009.
- **Most European economies recorded only modest growth in transactions volumes in 2009** due to the impact of the financial crisis. However, the Polish market continued to expand significantly (19%), as the government introduced initiatives specifically designed to facilitate adoption of non-cash payments means.
- **The number of non-cash transactions per inhabitant** was 332 in Finland and 298 in Sweden in 2009. These were the highest levels in Europe and put usage by Finns near that of Americans (see Figure 1.4). Notably, the governments and banks in Nordic countries have made a concerted effort to drive adoption of new electronic payment technologies. All major European and North American markets had a significant decrease of growth rates in 2009 compared to the growth experienced from 2001 to 2009. This slowdown occurred even in countries with high growth in the last decade and was particularly marked in Greece, which reported a drop in the number of non-cash transactions per inhabitant vs. the previous year. Poland was the only country with a significantly increased growth rate, and that was due to government initiatives.
- **Card usage rose in most countries around the world, pushing global transaction volumes up 9.7% despite the financial crisis.** Cards remain the preferred non-cash payment instrument globally and the card markets are very mature in the U.S., U.K., and the Nordic countries. Globally, cards have a non-cash transactions market share of more than 40% in most markets, with the high being 68% in Canada.

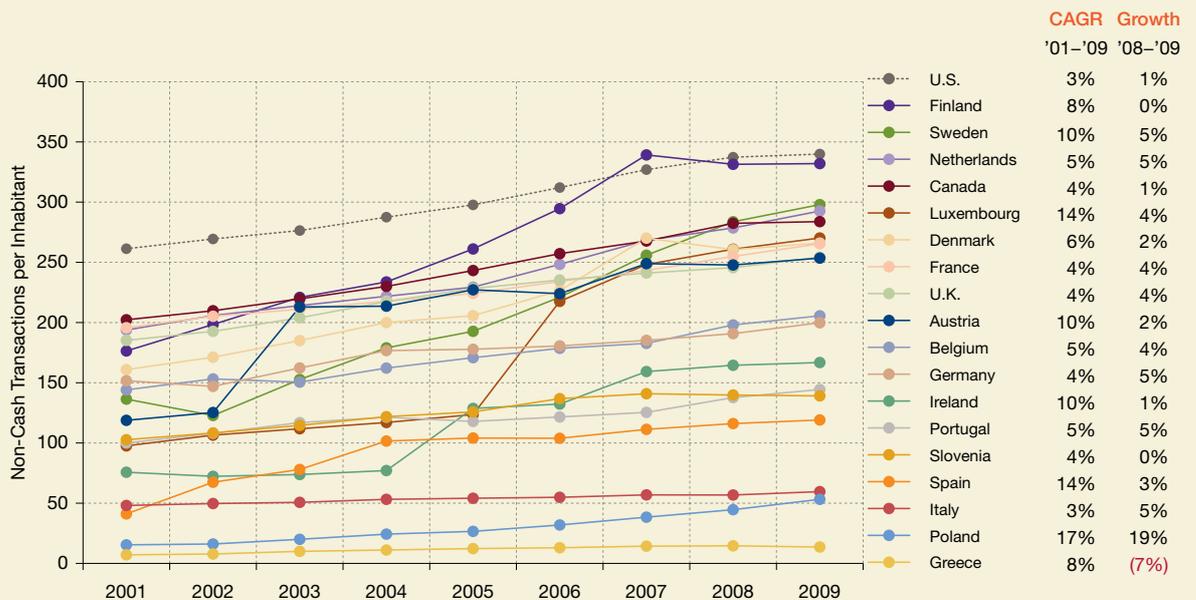
⁶ U.S. cards data does not include prepaid card transactions—refer back to Footnote 5 for more detail.

Figure 1.3 Comparison of Non-Cash Transactions in BRIC (Billion) and Change in Payment Instruments Mix (%), 2001 vs. 2009



Note: Russia data is estimated for 2001 as BIS data series does not extend back beyond five years. Chart numbers and quoted percentages may not add up due to rounding
Source: Capgemini analysis, 2011; ECB DWH—2009 figures, November 2010; Bank for International Settlements - Red Book - 2009 figures, December 2010

Figure 1.4 Growth of Non-Cash Transactions per Inhabitant by Country in Europe and North America, 2001-2009



Note: Data does not include prepaid card transactions. A 2007 change in Germany's methodology for collecting certain payments data causes a break in the time series so pre-2005 data is estimated for consistency
Source: Capgemini analysis, 2011; ECB DWH—2009 figures, November 2010; Bank for International Settlements - Red Book - 2009 figures, December 2010; 2010 Federal Reserve Payments Study, April 2011

- **As the volume of card usage increases, the average value of each transaction is steadily declining** (see Figure 1.5). As noted in previous WPRs, this trend is consistent with the broader use of cards even for lower-value transactions. In the U.K., for instance, the average value per card transaction dropped in 2009 to €57 from €66 in 2008, though the number of card transactions rose 8%. In the U.S., volume rose 5% while the average value per transaction dropped to €40 from €43. Regionally, the average value per card transaction is now highest among Europeans (€52), after a larger-than-average (12%) decline in value per transaction among residents of Mature Asia-Pacific. The major exceptions to card-market growth in 2009 were Spain, Ireland, and Greece—countries in which there was a tangible decline in spending amid ongoing economic challenges. There was also a decline in some countries (such as the Nordics, the U.S., and the U.K.), but this was also probably due to the level of market maturity achieved.

- **Check usage continued to decline across the globe in 2009** as the use of faster and more efficient non-cash payment methods expanded, fueled by a number of government-led initiatives. As a result, checks accounted for 16% of all non-cash global transactions in 2009, down from 22% in 2005. However, that aggregate decline masks tangible differences among markets. Checks are obsolete in Sweden and Norway, and rarely used in countries such as Germany, Austria, the Netherlands, and Belgium. However, checks still account for 24% of all non-cash payments in the U.S., where businesses favor them for a variety of reasons—and seem unwilling to switch to alternative electronic means. Checks also account for a relatively high percentage of non-cash payments in France, Ireland and the U.K. (20%, 14%, and 8% respectively).

EUROPE CONTINUES TO INCUR HUGE COSTS FROM RISING CASH-IN-CIRCULATION

The global use of cash payments is still endemic, especially for low-value retail transactions. But while cash may be convenient, it makes taxation less transparent, and it is costly to distribute, manage, handle and process. As a result, many governments are seeking to reduce these costs, and encourage the use of non-cash payment means. As of now, though, the Eurozone in particular continues to incur enormous costs from the high growth of euro cash-in-circulation.

Euro cash-in-circulation has doubled since euro coins and notes became legal tender in 2002 (when the total was €263 billion), and this measure excludes the high-denomination banknotes (€500 and €200) that are the most commonly hoarded. Of course, cash usage varies enormously by country, but euro banknote circulation consistently rises at a faster pace than the growth in non-cash transactions (for example, rising from €486 billion in 2008 to €510 billion in 2009).

European authorities are working to reduce cash and make payments more transparent by encouraging greater use of electronic payment means. Among existing country-specific proposals:

- *Poland.* The Finance Ministry is planning to introduce a 3-year plan that aims to increase electronic payments from 9% to 50% in an attempt to reduce the structural costs of cash.
- *The Netherlands.* Banks and retailers are cooperating to formulate common strategies in cash usage, and some supermarkets have stated they aim to be cashless by 2014.
- *U.K.* Government initiatives and education by the payments community are helping to reduce cash salary payments. In 2009, one in 20 people were paid in cash and that number is forecast to fall to one in 50 by 2018.

The benefits of cash substitution and cash-handling efficiencies could be substantial. Consider, for example, if the Eurozone were able to reduce its cash-to-GDP ratio to U.S. levels. In 2002, the Eurozone's cash-to-GDP ratio was about 25% greater than that of the U.S. (see Figure 1.6). Ten years later, the same ratio was 2.4 times that of the U.S. (and during that time the U.S. ratio has dropped 1.9% a year). In some of the large, mature economies such as Italy and Germany, cash usage remains high and the growth in non-cash transactions remains far more modest (3% and 4% respectively per year in 2001-09) than the double-digit growth in some other markets.

A 2010 European Payments Council (EPC) study on 2008 data estimated the cost of cash for all EU currencies at €84 billion, equivalent to €130 per inhabitant. Applied to the 325 million inhabitants of the Eurozone, this puts the annual cost of maintaining the cash lifecycle (from distribution to recycling) at between €40 billion and €45 billion, equivalent to 0.3%-0.4% of total Eurozone GDP.

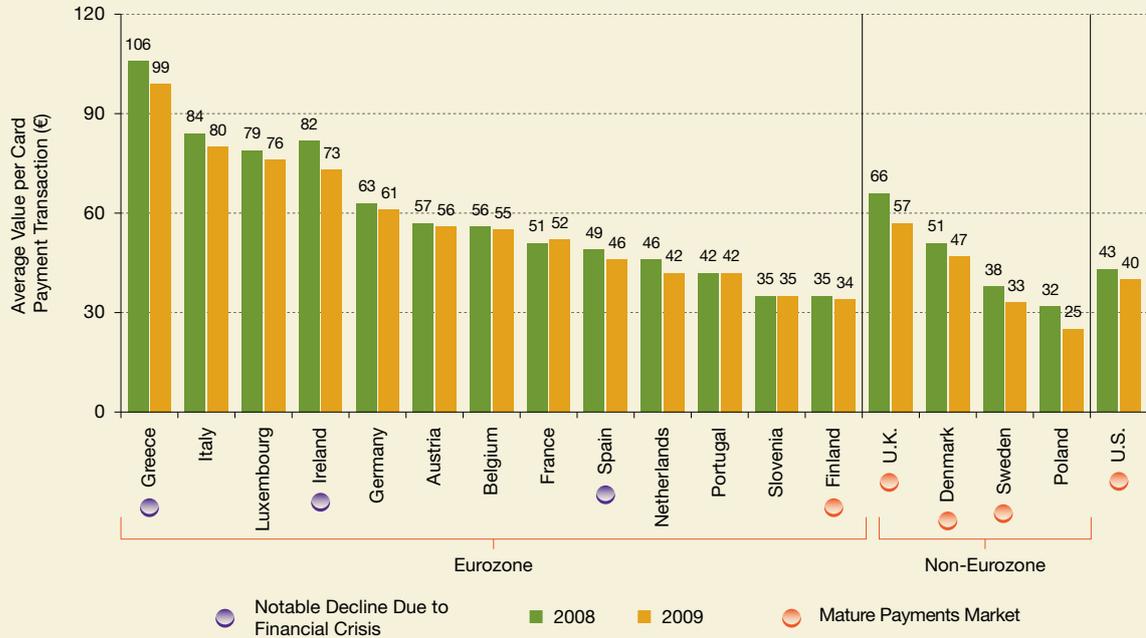
If the Eurozone could have achieved the U.S. cash-to-GDP ratio in 2008, it would have had almost 65% less cash, generating a proportional reduction in the cost of cash of €25 billion-€30 billion. Assuming the costs of cash were similar in 2009, even acknowledging that market fragmentation in the Eurozone would make it difficult to capture as much as 70% of those efficiencies, the gross savings could nevertheless have been as much as €18 billion-€21 billion in 2009. Annual savings of that size, which the Eurozone could put to any number of uses, would clearly be very positive—and helps to explain why authorities are likely to pursue the war on cash aggressively going forward. Moreover, it represents a huge potential market for PSPs to provide non-cash payment solutions.

Figure 1.5 Average Value per Card Payment Transaction – Europe and U.S. (€), 2008–2009

Growth '08-'09

Average Value per Card Payment Transaction (6%) (4%) (3%) (11%) (3%) (2%) (3%) 2% (6%) (9%) (1%) (2%) (5%) (14%) (7%) (14%) (24%) (8%)

Number of Card Transactions 0% 5% 8% 2% 7% 6% 7% 9% 3% 10% 7% 5% (1%) 8% 6% 8% 23% 5%



Note: Data does not include prepaid card transactions
Source: Capgemini analysis, 2011; ECB DWH—2009 figures, November 2010; Bank for International Settlements - Red Book - 2009 figures, December 2010; 2010 Federal Reserve Payments Study, April 2011; World Bank data, 2009

Figure 1.6 Cash-in-Circulation As a Percentage of Gross Domestic Product in U.S. and Eurozone (%), 2002–2009



Note: Cash-in-circulation does not include high-value banknotes (€500 and €200 in Eurozone; \$100 in U.S.)
Source: Capgemini analysis, 2011; ECB DWH—2009 figures, released November 2010; Bank for International Settlements - Red Book - 2009 figures, released December 2010; 2010 Federal Reserve Payments Study, released April 2011

Initial Trends in 2010

DEVELOPING ECONOMIES AND MATURE ASIA-PACIFIC ARE LIKELY TO LEAD GROWTH IN THE PAYMENTS INDUSTRY

Initial data suggests the growth in global payments transactions picked up again in 2010, rising to an estimated 7.8% globally, fueled by emerging markets and Mature Asia-Pacific and, in particular, by the growing use of cards in those markets (see Figure 1.7). The following trends are emerging from preliminary payments data for 2010:

- Non-cash payments are expected to show growth of 37.2% in CEMEA and 23.3% in Rest of Asia (excluding China and India).
- In BRIC nations, the number of non-cash payments is projected to increase 14% to 28.9 billion, with cards accounting for 43% of all such transactions, up from 38%.
- Non-cash payments in Mature Asia-Pacific are forecast to rise 13.5% to 27.5 billion, with cards accounting for 67%, up from 64%.
- Non-cash payments are likely to have kept growing in developed Europe (6.2%) and North America (3.5%) in 2010, and expansion looks to be greater than in 2009. In North America, the increased use of cards seems to be coming at the expense of check usage.

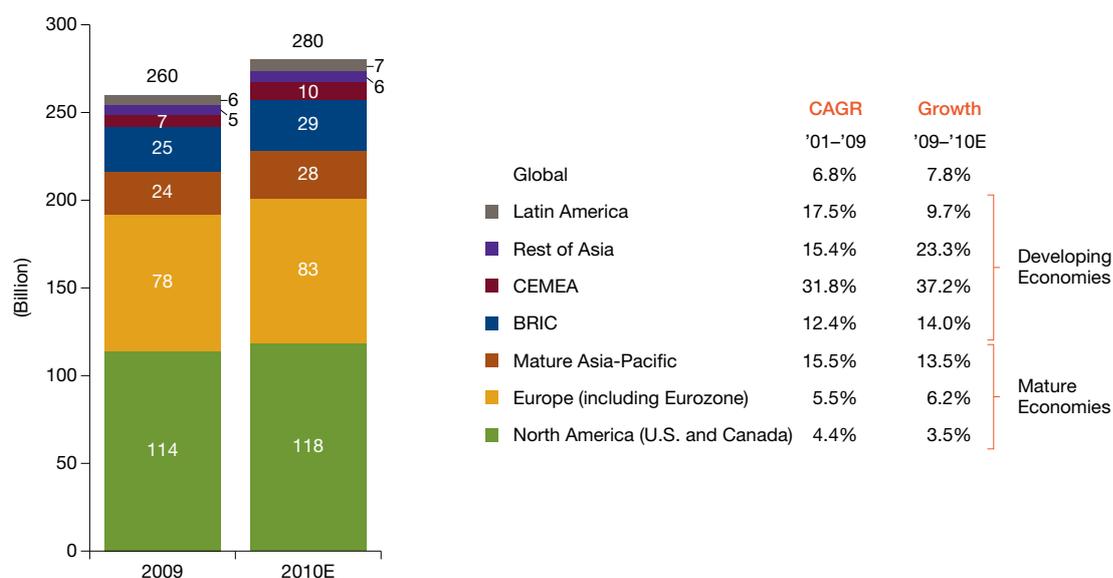
TRADE FINANCE AND REMITTANCES EMERGE AS SOME OF THE MOST PROMISING BUSINESSES

World exports bottomed in the first quarter of 2009, when exports posted their largest year-on-year decline in the prior decade. From there, however, exports have trended back up, and were 24% higher at the end of 2010 than at the beginning of 2009 (see Figure 1.8). After falling in 2008 and 2009, the value of global trade rose 13.5% in 2010 to a level similar to the pre-crisis volumes, according to the World Trade Organization. Asian economies have seen their trade flows rebound more strongly than those of developed economies, especially in terms of intra-regional trade and particularly trade among developing economies (so-called “South-South” trade).

This has contributed to the recent growth in international trade levels, which has in turn expanded demand for trade finance.

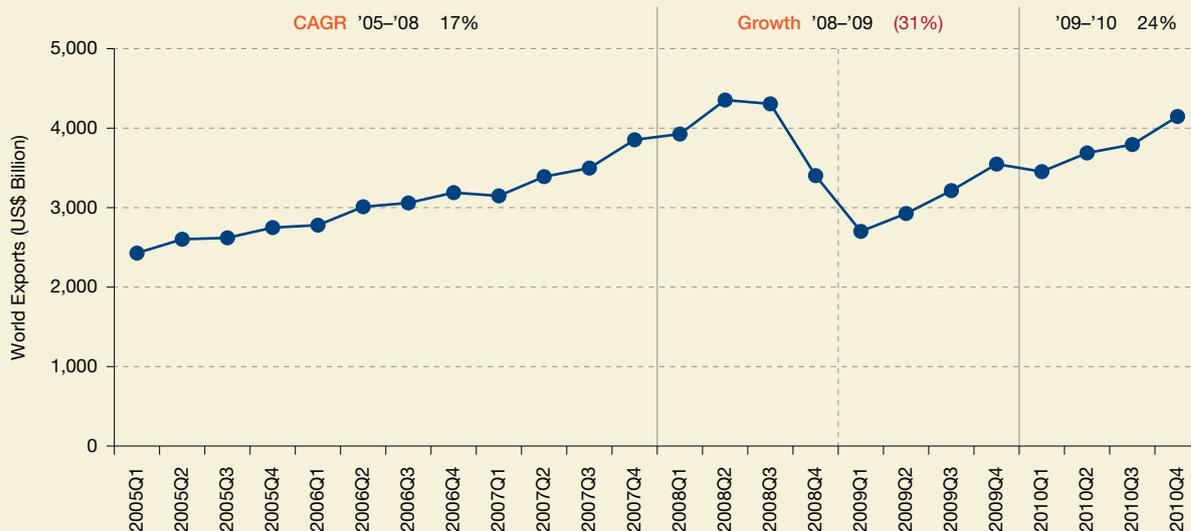
Among non-cash payments segments, workers’ remittances were hit hardest by the crisis and global volumes contracted 5% in 2009, with remittances to Europe and Central Asia sinking 23% (see Figure 1.9). This is partially due to the fact that many migrants are employed in developed countries, which were hit the hardest by the crisis. Moreover, many migrants are among the unskilled segments of the labor force, which suffered the first cuts. Nevertheless, remittances appear to have resumed their ascent in 2010, albeit growing at a slower pace of 6% than before the crisis (a 19% average per year in 2000–08).

Figure 1.7 Expected Growth in Number of Non-Cash Transactions by Region (Billion), 2009–2010E



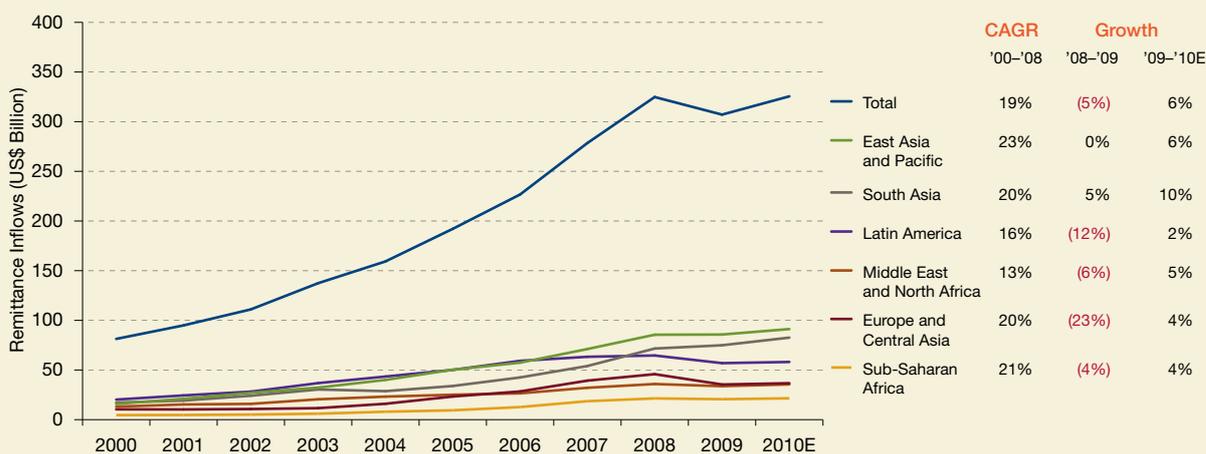
Note: 2010 data are estimates (E); CEMEA (Central Europe, Middle East, Africa) does not include South Africa; Mature Asia-Pacific comprises Australia, Japan, Singapore and South Korea; Latin America does not include Brazil; BRIC comprises Brazil, Russia, India, China; China data has been restated to remove ATM card transactions. Chart numbers and quoted percentages may not add up due to rounding
 Source: Capgemini analysis, 2011; ECB DWH—2009 figures, November 2010; Bank for International Settlements - Red Book - 2009 figures, December 2010; 2010 Federal Reserve Payments Study, April 2011

Figure 1.8 Quarterly World Exports (US\$ Billion), 2005–2010



Source: Capgemini analysis, 2011; ECB DWH—2009 figures, November 2010; Bank for International Settlements - Red Book - 2009 figures, December 2010; 2010 Federal Reserve Payments Study, April 2011; World Trade Organization Secretariat, 2011

Figure 1.9 Evolution of Worldwide Remittance Inflows Market, Receiving Regions (US\$ Billion), 2000–2010E



Source: Capgemini analysis, 2011; ECB DWH—2009 figures, November 2010; Bank for International Settlements - Red Book - 2009 figures, December 2010; 2010 Federal Reserve Payments Study, April 2011; World Trade Organization Secretariat, 2011

ELECTRONIC AND MOBILE PAYMENTS ARE EXPECTED TO GROW MARKEDLY

Online payments for e-commerce activities (e-payments) and payments for goods and services using mobile devices (m-payments) are expanding across the globe. Global e-payments and m-payments collectively accounted for 22.5 billion transactions valued at €886 billion in 2010. At present, the proportion of transactions handled outside bank payments systems remains relatively small—non-bank PSPs accounted for less than 1.5 billion of these transactions in 2010—but the non-bank share of these fast-expanding payments segments is growing rapidly.

The growth in e-payments and m-payments usage will vary significantly by market since country-specific regulatory, economic, technological, and social factors all affect the level of business-model innovation in these fields, as well as the willingness and ability of users to adopt such payment means. However, it is clear these segments will add to the expansion in global non-cash payments in coming years—and provide non-banks with a viable path into the non-cash payments markets as a whole.

In general, e-payments are currently more viable in developed countries, which have the Internet infrastructure and penetration that emerging markets lack. This has accelerated growth, in particular in online retail purchases. M-payments are gaining most traction in emerging markets, where they represent a cost-effective and secure medium for various types and sizes of cashless payment transactions, and provide access to financial services to the unbanked.

Nevertheless, both segments are developing well:

- **Electronic Payments.** The number of e-payments transactions totaled 17.9 billion in 2010, and is expected to grow at a sustained 19.1% a year to total 30.3 billion in 2013 (see Figure 1.10). Mainstream payments cards (credit, debit, prepaid) dominate e-payments, but alternative (non-bank) providers are gaining traction. Non-bank providers accounted for about 6.5% of the total in 2010 and are likely to account for nearly 9% or 2.7 billion transactions in 2013. The aggregate value of global e-payments was €824 billion in 2010 and is expected to reach €1.4 trillion in 2013. The average value of each non-bank e-payments transaction is nearly €45, far higher than for m-payments.
- **Mobile Payments.** The number of m-payments transactions totaled 4.6 billion in 2010, and is expected to grow 48.8% per year through 2013 to 15.3 billion (see Figure 1.11). Non-bank providers handled about 6% of m-payments (272 million transactions) in 2010 and are expected to handle 1.2

billion or 8% of all m-payments in 2013. The value of global m-payments reached €62 billion in 2010, and is expected to grow aggressively at a sustained annual rate of 52.3% from 2009 to 2013, putting global m-payments at €223 billion. This growth is likely to be led by workers' remittances and retail purchases using mobile phones.

CONCLUSION

The global payments segment proved remarkably resilient overall to the effects of the financial crisis, though transaction volumes grew more slowly in developed markets that were hardest hit by the economic downturn. Notably, during the last decade, the payments mix has significantly changed in favor of cards, which today account for over 40% of global non-cash payments markets.

The global use of cash payments is still endemic, especially for low-value retail transactions. But cash is costly to distribute, manage, handle, and process, so many initiatives are seeking to reduce these costs by encouraging the use of non-cash payments instruments. In this sense, cash represents one of the most important opportunities for non-cash payments growth—and for cost reductions for banks and for the whole economic system.

Initial trends in 2010 suggest the growth in global payments picked up after the crisis, and the growth is particularly significant in trade finance and workers' remittances.

E-payments and m-payments will continue to expand their share of non-cash payments in coming years. M-payments are gaining most traction in emerging markets, where they represent a cost-effective and secure medium for various types and sizes of cashless payment transactions. Mobile financial services will be one of the key drivers for financial inclusion going forward. Mobile payments are on the cutting edge of innovation, and thus have the potential to be the most powerful tool to develop payments in emerging economies.

Having survived the crisis well, the payments arena is nevertheless faced with challenges—especially managing the effects of current and planned regulatory and industry initiatives spawned by the crisis, and the numerous other coincident reforms under way. In Section 2, we discuss how many of these initiatives, even when primarily directed elsewhere, will ultimately reshape the payments landscape—and certainly affect the operations and profitability of banks and other PSPs.

Figure 1.10 Global E-payments: Number of Transactions (Billion), 2009–2013F



Note: Electronic (e-) payments are online payments for e-commerce activities; Total non-cash payment market size is taken from Capgemini estimates, assuming 8% growth for future years; data for 2011-13 are forecasts (F); Chart numbers and quoted percentages may not add up due to rounding
Source: Capgemini analysis, 2011

Figure 1.11 Global M-Payments: Number of Transactions (Million), 2009–2013F



Note: Analysis based on Arthur D. Little, Juniper Research, IEMR, EDC, Generator Research estimates, using Capgemini assumptions; Total non-cash payment market size is taken from Capgemini estimates; Chart numbers and quoted percentages may not add up due to rounding
Source: Capgemini analysis, 2011; M-payments surging ahead: distinct opportunities in developed and emerging markets, Arthur D. Little Analysis, 2010

Trade Finance—A Business of Volume and High Specialization

TRENDS AND MARKET SIZE

Trade Finance (TF) is an important part of the Transaction Services offering for most international banks, sometimes serving as a “hook” product, but more recently as a stable revenue generator even during the financial crisis. TF is also a critical product for bank clients and for global trade, which is recovering after declines during the financial crisis. The value of global trade rose 13.5% in 2010 to a level similar to the pre-crisis volumes⁷, after falling in 2008 and 2009.

During this recovery, the global number of SWIFT transactions has also been rising, indicating an increased use of traditional TF products, such as Letters of Credit (LOCs). The correlation of these trends (Figure 1.12) is interesting: during the financial crisis, with risk levels rising and global trade values falling dramatically, traditional trade finance decreased less than proportionately.⁸

REVENUES AND COMPETITION

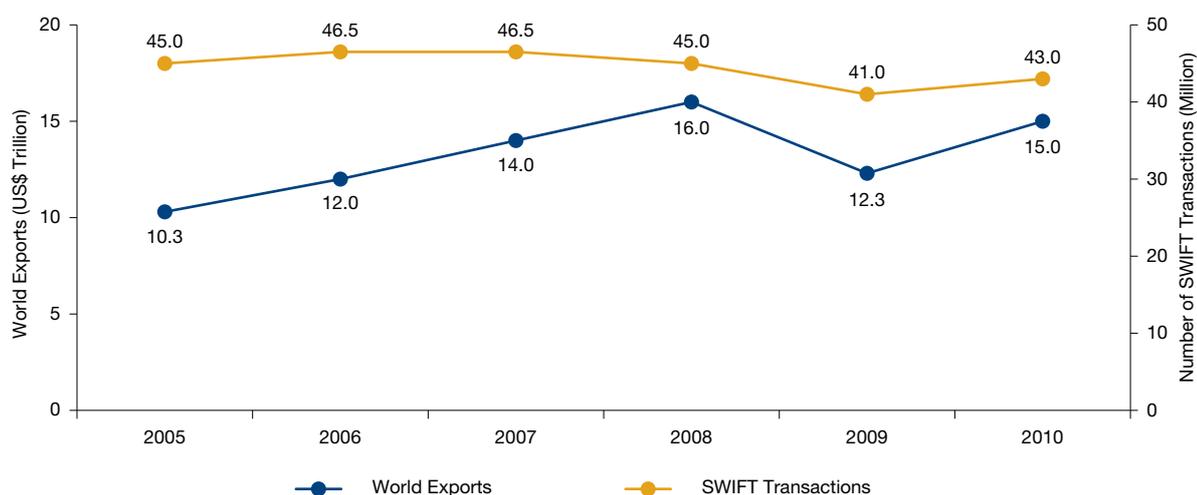
TF is a scale business so investments in higher capacity and efficient processing platforms can lead to a competitive advantage; this is the main reason the traditional market is concentrated and the top seven players control more than 50% of global volumes. Scale will continue to be critical, requiring significant investments in technology, and some banks have already invested to position themselves as outsourcers for smaller banks.

As global economies become more integrated, it is easier for exporters and importers themselves to access dependable information about foreign-trade partners, and they are less willing to pay for the risk protection afforded by traditional products. This has led to a preference for Open Accounts (OA). Banks can provide value through Supply Chain Finance (SCF), taking care of invoices and funding suppliers (and buyers) against invoices. OAs make up about 80% of total TF transactions. TF is far more lucrative than OA: of global TF revenues, traditional TF accounts for around 60%—despite accounting for less than 20% of the volumes⁹.

A WORD ABOUT SUPPLY CHAIN FINANCE (SCF)

There is a huge potential market in OA transactions, and banks can take advantage of these volumes by promoting their foreign exchange and SCF services more consistently. While buyers and suppliers can fund their own supply chains, the SCF services reduce both the cost of capital and the risk of these operations—allowing clients to decrease their working capital requirements and improve their ability to raise capital. The advantage for clients is accompanied by considerable benefits for banks, as they can increase revenues by financing the supply chain (working capital) for their clients, specialize by expanding into their entire supply chain, cross-sell other products and services (such as foreign exchange services) to other operators in the supply chain, and increase their client base.

Figure 1.12 World Exports (US\$ Trillion) and SWIFT Transactions (Million), 2005–2010



Source: International Chamber of Commerce “Global Survey on Trade and Finance” Capgemini research and analysis, 2011

⁷ World Trade Organization (WTO) estimates.

⁸ LOCs afford better risk protection on trade finance transactions, and so during the crisis there was a slight shift from Open Accounts (OAs) to LOCs. SWIFT transactions went from 40.5 million TF messages to 42.9 million (5.8% growth) in 2010. LOCs and guarantees made up 33 million of these, and grew 8.2% in 2009-2010.

⁹ “Global Survey on Trade and Finance: The future of transaction banking,” International Chamber of Commerce.

EMERGING TRADING CORRIDORS

The recovery in trade is strong, but not globally uniform. Furthermore, credit risk and Know Your Customer (KYC) issues are relevant in certain geographies and segments.

China recently surpassed Germany as the number one exporter in the world (and 64% of all LOCs are issued in Asia). More intra-regional trading is emerging—in Asia as well as inter-regionally, such as that between Brazil and China. As each BRIC market is large, developing countries with established connections to BRIC countries have managed to stay strong during the crisis, and the South-South share of global imports is now 38% (up from 24% in 2000).

BASEL III COULD INFLATE THE COST OF TRADE FINANCE

Basel III is having a direct and indirect impact on TF as banks are required to hold capital as a percentage of their assets (see Section 2). Before Basel III, only 20% of the value of TF assets was counted in total assets; Basel III plans to eliminate this exception, making TF assets attract 100% in the calculation of the total. This would lead to a fivefold increase in the cost of capital for TF products—which Basel III categorizes in the same way as far riskier products.¹⁰ BAFT-IFSA (Bankers' Association for Finance and Trade and the International Financial Services Association) and other organizations are lobbying to change these inconsistencies, but if the rules are not changed, banks might need to increase the costs of trade finance to account for these heightened capital costs. In the light of the evidence presented, most observers anticipate that regulators may adjust Basel III to avoid the negative impacts on trade.

Hot Topics:

Workers' Remittances – A Platform for Cards and Mobile Payments

OPPORTUNITIES REMAIN AS THE MARKET RETURNS TO GROWTH

Workers' remittances declined during the financial crisis but have fully recovered, despite the fact that many countries that employ a lot of migrant workers are reducing immigration because of high domestic unemployment levels. Remittance flows to developing countries are expected to increase by 6.2% in 2011 and 8.1% in 2012 to reach \$347 billion by 2012,¹¹ with India, China, Mexico and the Philippines being the top recipients of migrant remittances.¹²

The scale of migrant remittances is even greater in the growing market of cross-border payments when including informal flows that are not tracked in data, so remittances is clearly a growing business—especially since international aid and financial organizations, from the World Bank to the G8, consider remittance solutions to be critical for financial inclusion (the availability of financial services at affordable costs to disadvantaged and low-income segments of society).

DIFFERENT CHANNELS ARE ADOPTED

The main traditional channels include non-bank Money Transfer Operators (MTOs), banks, post offices, Informal Money Transfer Services (IMTS). New entrants such as mobile operators are pushing innovative channels (mobile payments, prepaid cards, peer-to-peer portals), but IMTS still represent 20%-25% of global remittances, so official data significantly underestimates the full scale of remittance flows. The remittance preferences of migrant groups vary by country, depending on cost, reliability, speed, local financial network, etc. National policies, including those on financial inclusion, could improve transparency in remittances and encourage greater use of formal channels.

REGULATORY ISSUES

Traditional players say the current regulatory framework for Remittance Service Providers (RSPs) may need to be enhanced in the interests of a level playing field, and argue that new entrants are unregulated or at least less regulated. However, new entrants tend not to be very active in cross-border payments, so regulators have an opportunity to cooperate with Mobile Network Operators (MNOs) to balance the risks and benefits of new channels.

¹⁰ For example, a 30-day LOC (which is short-term and collateralized) is treated the same way as a 10-year unsecured loan when in fact, the risk of default on TF transactions was less than 0.02% even during the crisis.

¹¹ "Migration and Development Brief", S. Mohapatra, D. Ratha, A. Silwal, World Bank, November 2010. (Note this data does not include an estimated \$9.1 billion in remittances to Poland, which the World Bank no longer classifies as "developing".)

¹² Ibid. (Flows to East Asia and the Pacific are expected to grow 7.2% and 8.5% in 2011 and 2012 respectively to reach \$106 billion, led by China (which had inflows of \$51 billion in 2010) and the Philippines (\$21.3 billion). Flows to Europe and Central Asia are expected to recover to reach \$43 billion in 2012.)

The U.S. Dodd-Frank Act and the EU Payment Services Directive (PSD) are also improving transparency and competition in both payments and remittance services. U.S. service providers, for example, will be required to disclose to senders the amount that will actually be credited to the beneficiary, stipulating fees and charges per transaction and other information. The PSD has established capital, reporting, licensing, and other requirements for PSPs managing workers' remittances.

REVENUES AND OPPORTUNITIES

Remittances present a significant opportunity; revenues have been estimated at around €15 billion–€17 billion,¹³ when taking account of related cross-border, correspondent-banking and currency-conversion services. Accessibility for both sender and receiver is key to success in the remittances business and requires physical and remote channels, systems and competitive foreign exchange.

Many banks can provide some but not all of these elements, and are likely to need to pursue one of three approaches to provide an end-to-end remittances service:

- Build capabilities—to ensure a presence in both send and receive countries.
- Acquire capabilities—partnering with technology providers/ MTOs/other banks.

- Develop complementary partnerships—for example, a bank with a retail presence in a significant send country could partner with a local bank with subscribers in a significant receive country.

If successful, remittances could create significant adjunct opportunities for banks to develop new revenue streams and acquire customers in new markets. Most banks do not have the global infrastructure to be a standalone player in remittances but some are establishing partnerships and/or acquisitions to overcome their limitations.

Market potential clearly exists, and banks at least should be able to:

- Define a clear strategy on remittance offerings.
- Make estimates to define which of the remittance corridors offer opportunities.
- Define an overall framework to interact with identified counterparties.
- Market and bundle new and compelling value-added services.

Hot Topics:

Cash – Reducing Costs While Developing Cards and Mobile Payments

The highly mature economies of the U.S. and Eurozone together accounted for 160 billion non-cash transactions in 2009—the highest numbers in the world—and yet those volumes are dwarfed by the number of transactions conducted in cash.

In fact, more than 80% (about 715 billion)¹⁴ of all transactions were made using cash. At the same time, the cash-in-circulation in the U.S. and Eurozone in 2009 (not counting high-value €200, €500, and US\$100 notes) was worth approximately €675 billion.

The lifecycle of cash is expensive. Cash passes through central banks, businesses, banks and secure cash-in-transit (CIT) agents. And while it is unrealistic to imagine a society without cash, it would clearly be beneficial to the system to shift more cash payments to electronic means. But this shift requires cash-replacement initiatives to reduce cash-in-circulation, and cash-handling efficiencies to minimize the cost of managing the cash that remains in circulation.

CASH-HANDLING EFFICIENCIES

The main costs of managing the cash cycle are borne by banks and retail businesses, so these stakeholders could both reduce costs and improve margins if operational processes could be made more efficient, and if economies of scale could be achieved in cash processing, distribution, and machine management—most likely by outsourcing cash functions or cooperating with other banks. (One example of such inter-bank cooperation is an initiative to pool automated teller machines (ATMs) in Sweden, where five of the biggest banks have announced that by the end of 2011, they will transfer ownership of their ATMs to a separate company so as to obtain economies of scale.)

¹³ Capgemini analysis of SWIFT data and SWIFT Worker Remittances Factsheet, October 2010.

¹⁴ Capgemini estimates 2011, EPC Newsletter January 2011.

Operational processes could also be reorganized to optimize and shorten the cash lifecycle, eliminating or reducing costly intermediate steps (e.g., double-counting, transportation). The benefits would include cost reductions (e.g., less headcount, logistics and infrastructure) and security enhancements (minimal inventory differences, cash losses, fraud, theft, etc.).

Banks have been moving for some time toward more efficient cash-in operations, both at the teller and at the ATM, allowing customers to deposit cash automatically, for example. There are also major benefits to implementing closed circuits for cash recycling within an organization (e.g., a bank branch or retail point-of-sale), re-using deposited cash for cash-out operations and thus reducing the volume of cash-in-circulation.

Another option is cross-sector closed cycles via collaboration—for instance between banks, retail businesses, and CITs. By adopting integrated cash lifecycle management solutions, cash received at the POS can be fed into nearby ATMs. (One such example is the venture between Shell Oil and Postbank in Germany in which Shell stations' cash receipts are used to replenish on-site ATMs. The system is entirely self-contained so the bank almost never has to transport cash from its branches).

CASH REDUCTION

Innovations in micro-payments—payments of small denominations—could drive significant cash substitution in the future and improve the efficiency of cash handling and reduce its costs. In the U.K. for example, 80% of cash transactions are under £10;¹⁵ in Canada, cash is king for any transaction under \$25.¹⁶ The potential is greatest in retail businesses where cash transactions tend to be in small amounts.

Importantly, there are plenty of non-bank operators willing and able to experiment with ways of handling such payments, but they will need to deliver solutions that can compete with the simplicity of cash, which is quick, easy, secure and anonymous.

In fact, consumers may need to be incentivized to change their habits. The public sector could play an integral role in cash substitution, however, by shifting its own activities to electronic means, and by legislating that payments be electronic and thus fully traceable to fight the “black economy” and other illegal transactions (also see the eGovernment Spotlight on p42).

Cards play an important role in any transition to a cashless society. Usage of cards is growing around the world, and cards will remain the most commonly used non-cash payment means in the near future. Banks are already leveraging prepaid cards in a move to target unbanked customers, and prepaid cards are emerging as a mainstream payment means. (In the U.S., for example, the number of prepaid card transactions has risen from 3.3 billion in 2006 to 6.0 billion in 2009.)

Looking further ahead, the use of advanced payments technologies based on Internet, mobile, and contactless methods will further drive cashless initiatives. eCommerce is already a reality and will be propelled even more in the future by trends such as the Peer-to-Peer (P2P) payments used in social media and social networks. Near-field communication (NFC) technology (in both mobile and cards) also opens up many different opportunities because it has manifold uses.

Contactless technologies have already been widely piloted in the public transportation sector (among others), most notably in Japan, Hong Kong, and Singapore, but to an extent in Europe and the U.S. too. For example, the Isis project in the U.S. was formed by three major mobile operators (AT&T, Verizon, and T-Mobile). The original plan was for Isis to set up its own payments network, but today, the project is collaborating with VISA and MasterCard to provide a “mobile wallet” using traditional card networks and innovative NFC technology. Initial trials are planned for early-2012.

¹⁵ “The Way We Pay 2010,” The U.K. Payments Council.

¹⁶ “Trends in Retail Payments and Insights from Public Survey Results” – Bank of Canada, 2006.

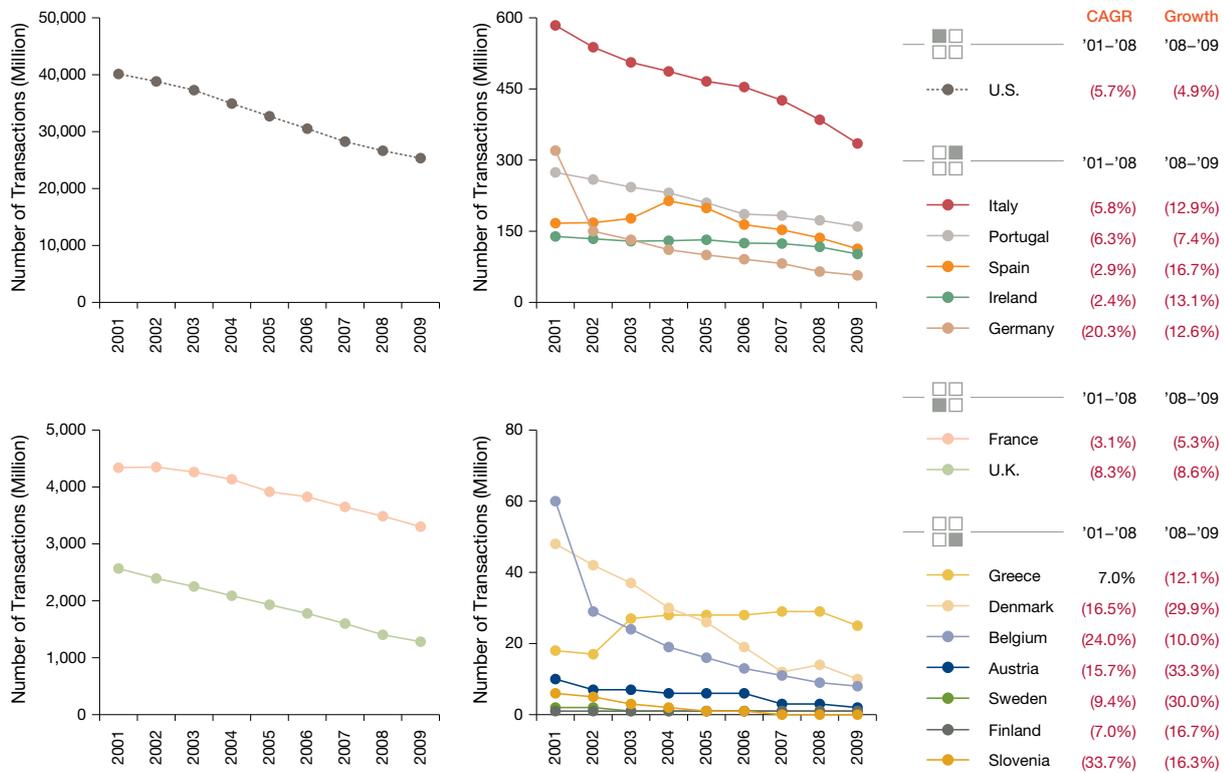
Governments Adopt Different Approaches to Reduce Check Usage

Checks are versatile, convenient and familiar to many payers and payees, but the use of paper-based instruments is declining in the digital age as the use of debit and credit cards rises. Nevertheless, check usage is strong in certain markets, due to stakeholder preferences and the costs (real and perceived) of migrating to electronic payments. Recognizing this reality, governments and payments providers are considering whether and how to drive check substitution, seeking a balance between client needs and commercial efficiency.

In many countries, check usage has declined substantially (see Figure 1.13). Checks accounted for just 16% of non-cash global transactions in 2009, down from 22% in 2005, and in some European

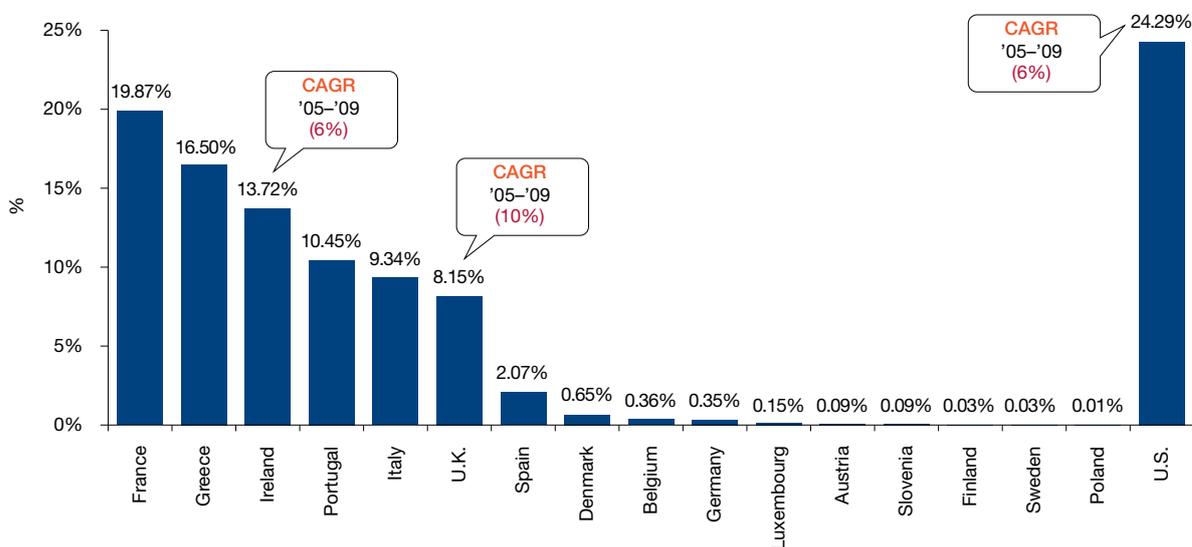
countries, checks are obsolete (see Figure 1.14). But in other countries—including the U.K. and the U.S.—proactive strategies are needed if significant progress is to be made toward further reducing and eventually eliminating the use of paper-based checks. The U.K. Payments Council announced in July 2011 that the U.K. strategy toward checks would focus on encouraging innovation to develop viable alternatives, rather than attempting to decommission checks altogether, as had been considered originally. In the U.S., the focus remains on improving the efficiency of current check processing by allowing electronic presentation of paper-based checks—a move that has prompted huge investment in check-imaging systems.

Figure 1.13 Number of Check Transactions in Europe and U.S. (Million), 2001–2009



Source: Capgemini analysis, 2011; ECB DWH—2009 figures, released November 2010; Bank for International Settlements - Red Book - 2009 figures, released December 2010

Figure 1.14 Checks As a Percentage of Total Non-Cash Transactions in Europe and U.S. (%), 2009



Note: Non-cash transaction totals used to calculate check share do not include prepaid card volumes
Source: Capgemini analysis, 2011; ECB DWH—2009 figures, released November 2010; Bank for International Settlements - Red Book - 2009 figures, released December 2010

The differing focus between the U.K. and U.S. approaches is quite clear:

U.K.

In July 2011, the U.K. Payments Council abandoned tentative plans to target the October 2018 closure of the U.K. check clearing system. The decision by the Council means checks will remain in use for as long as customers require them. However, the Council is closely monitoring check usage, and volumes are expected to keep declining—possibly to a point at which the current processing model becomes uneconomic. If this position is reached, a cost-benefit analysis will need to take place.

To conduct a cost-benefit analysis, the following are some of the issues that would need to be considered:

- **Data must be gathered and analyzed** to properly understand demand (including the willingness of users to pay for checks and their alternatives), time (costs and benefits of switching), and scope (number of people and organizations impacted by the change).

- **Key stakeholders must be properly identified and understood.** In the simplest terms, stakeholders fall into two categories—drawers and payees—but these categories themselves include various segments (individual consumers, businesses and financial institutions, charities and voluntary organizations and public sector organizations). Within these sub-segments, the level of dependency on checks differs, as does the size and volume of transactions. Check usage even varies by demographic and socio-economic groups.
- **The costs and benefits to each segment must be properly gauged.** In switching from checks, there may be upfront costs involved in migrating to an alternative payment method, as well as ongoing costs or savings from using alternative means and managing fraud costs. In terms of system costs, there will be both one-time savings and ongoing savings from closing down clearing systems.

It will be important to show how the costs and savings involved in abolishing checks would accrue to different stakeholders, because the impact would determine the amount of support the payments industry receives for plans to phase out checks and switch to alternative means.

U.S.

Check payments continue to decline in the U.S., and have already been eclipsed by debit cards as the most commonly used non-cash instrument. Checks written by consumers to businesses for household bill payments and POS transactions represented 44% of all checks written in 2009—after a 10%-per-year decline since 2006.

However, the B2B use of checks remains common for a variety of reasons, not least because tangible float benefits are still available in the U.S. Moreover, counterparties may not accept electronic payments and few incentivize them (e.g., through discounts offered for electronic payments). In fact, businesses appear to see little reason to switch from checks, because they do not believe they have the transaction scale to capture worthwhile savings from switching or because of new costs (in infrastructure and processes) in adopting electronic alternatives. Given these attitudes, financial institutions will need to demonstrate real cost and efficiency benefits from electronic alternatives to reduce check usage.

In the meantime, the U.S. has created the regulatory framework (via the Check Clearing for the 21st Century Act, or “Check 21”) to clear and settle checks electronically. Electronic check clearing and settlement is expected to show sustained annual growth of 9.8% in 2008-12 (see Figure 1.15). The Check 21 infrastructure has also enabled remote

deposits so customers can, for instance, make deposits by uploading a check image to their bank via a mobile device.

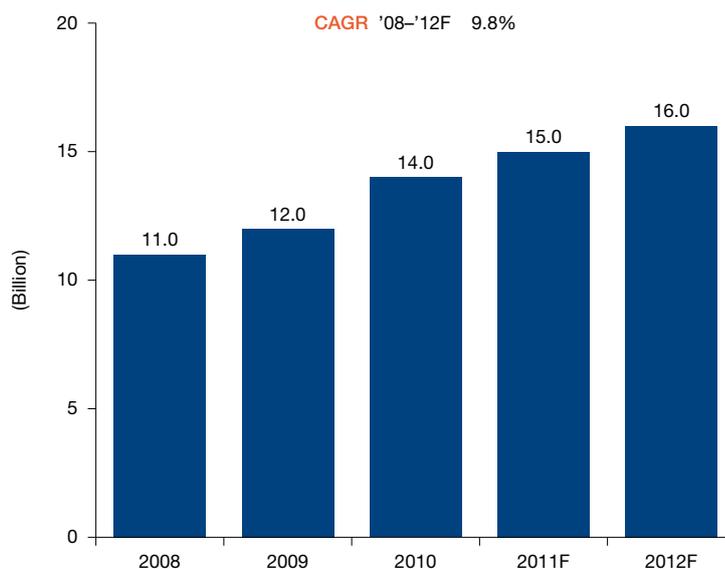
Image-based check clearing has also reduced check-processing costs (handling, sorting, transporting, storing, guarding, etc.), and thereby removed some of the urgency to transition from checks. Certainly, the number of financial institutions handling electronic checks in the U.S. is growing rapidly, with the number of routing transit numbers (R/Ts) assigned to financial institutions that can process check images growing 36.8% a year in 2006-10.

CONCLUSION

In the last five years, check usage has declined in most markets; but it remains to be seen how successful government and industry initiatives will be in reducing usage further or in eliminating the use of checks altogether.

Clearly, the U.K. and the U.S., are each taking a different approach, designed to address the preferences and realities of their local markets. In Europe, a number of countries have tended toward full decommissioning of checks—within the limitations imposed by certain social categories; this is in contrast to the U.S., which has decided not to invest in decommissioning, but rather to focus on streamlining processes and reducing costs.

Figure 1.15 U.S. Electronic Clearing and Settlement of Checks (Billion), 2008–2012F



Source: Capgemini analysis, 2011

In the Fight Against Card Fraud, Chip-and-PIN Technology Proves Effective

As the use of non-cash payments instruments grows, so does concern about the potential for fraud. The payments industry is pursuing various innovations to tackle fraud and better secure non-cash transactions—and thereby bolster consumer confidence. Attention is focused most, however, on e-commerce transactions, especially as electronic thefts increasingly hit the headlines.

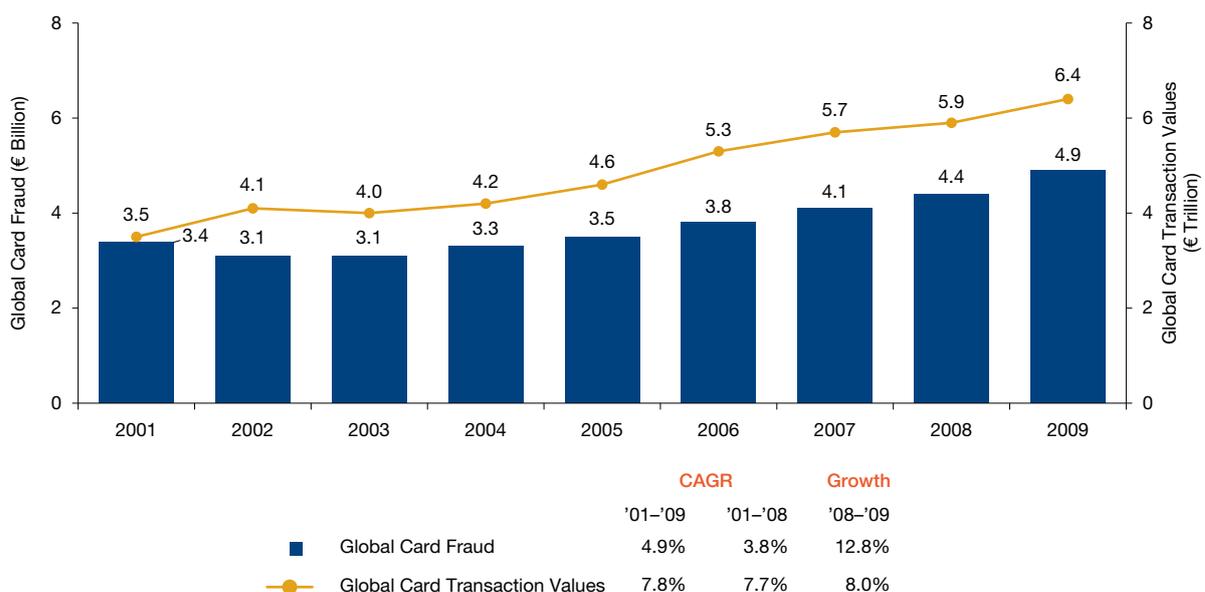
Global card fraud has increased consistently along with card usage in recent years (see Figure 1.16). The number of fraudulent card transactions grew 7.2% and 12.8% respectively in 2008 and 2009, with the amount lost to card fraud totaling €4.9 billion in 2009, up from €4.4 billion in 2008 and €3.4 billion in 2001.

As a result, the scale of card-fraud losses is growing as a percentage of total transaction values. This rapid growth is largely because fraudsters have found more ways to compromise merchants' databases and processor data centers, gaining

access to far more accounts than they could through traditional means such as stealing physical cards from wallets or mailboxes.

To help fight card fraud, many countries have moved toward chip technology, which has significant advantages over cards that only have magnetic stripes. Most notably, chips combined with a personal identification number (PIN) can generate dynamic data, producing a unique, one-time authentication for a specific transaction. This contrasts with “magstripe-only” cards, which use static data just to verify the card itself. The U.S. still uses mostly magstripe-only cards, but Europe and much of the rest of the world has or plans to transition to chip-and-PIN technologies, mostly using EuropayMastercardVisa (EMV) specifications that define the global interoperable standards for such cards.

Figure 1.16 Global Card Fraud (€ Billion) and Global Card Transaction Values (€ Trillion), 2001–2009

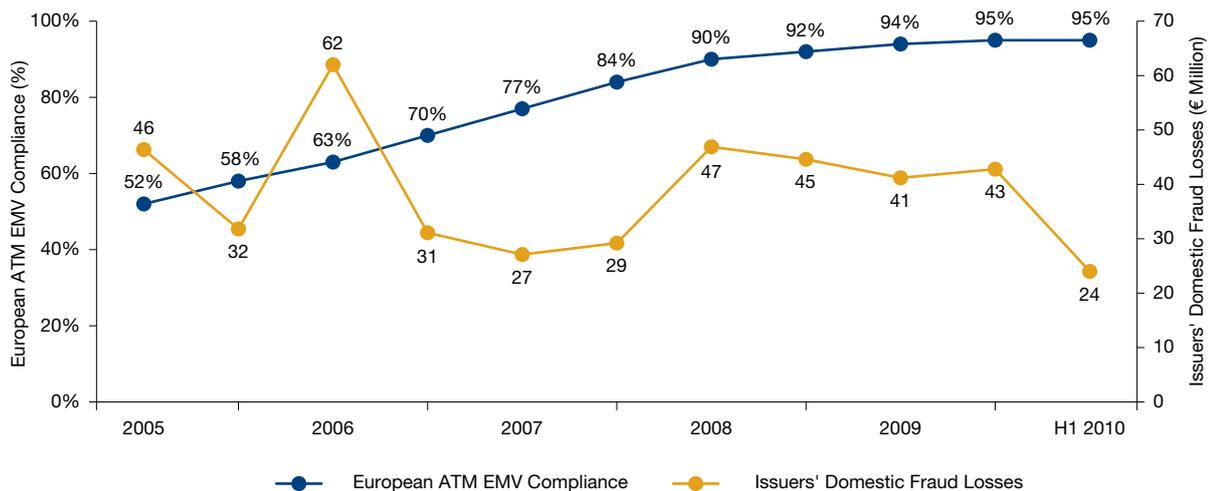


Source: Capgemini analysis, 2011

In fact, 95% of European ATMs are now EMV-compliant. Asia-Pacific has also witnessed growth in EMV-based smart cards, though adoption is greater in developed countries such as Japan and South Korea than in emerging markets such as India and China. EMV has proved highly effective in reducing fraud, especially related to face-to-face (POS) transactions, ATM withdrawals and lost and stolen cards. In the U.K., for example, counterfeit card fraud losses have dropped by 77% since 2004 when chip-and-PIN cards were first rolled out.¹⁷ And across Europe, fraud losses have declined dramatically as more ATMs have become EMV-compliant (see Figure 1.17).

The U.S. is the single biggest exception in the global move toward EMV adoption. The U.S. employs sophisticated fraud-detection measures of its own, including real-time issuer authorization systems, but U.S. merchant groups and the Federal Reserve are nevertheless studying whether the growing vulnerability of magstripe cards warrants a shift to EMV-based chip-and-PIN cards. However, there would clearly be substantial costs involved in undertaking EMV implementation. EMV-compliant cards are more expensive to produce and issue than cards with a magnetic stripe, and switching to EMV would involve additional infrastructure and device costs.

Figure 1.17 European ATM EMV Compliance Rate (%) and European Card Issuers' Domestic Fraud Losses (€ Million), 2005–H1 2010



Source: Capgemini analysis, 2011; The European ATM Security Team (EAST): "European ATM Crime Report 2010"

¹⁷ Financial Fraud Action U.K., "Fraud: The Facts, 2010".

In fact, a switch to EMV could cost the U.S. cards industry several billion dollars, making the business case complex; however there may be benefits beyond the simple reduction in existing fraud trends. At a systemic level, for instance, the U.S. will need to consider whether it could become an international magnet for credit-card theft if it keeps using cards that are easier to counterfeit. In addition, issuers and merchants will need to consider customer experience—as well as the potential loss of transaction volumes—if U.S. cardholders are unable to use their magstripe cards easily while traveling abroad.

CONCLUSION

At present, financial institutions and merchants are absorbing fraud-related costs, and significant investment continues to be made in fraud prevention solutions, using both tactical and strategic measures.

Technology and technical specifications are proving to be a critical tool in fighting fraud, and full global interoperability, most likely around EMV standards, could potentially prevent even more fraud from a variety of attack points within the payments system. This would position stakeholders to wage a more comprehensive fight on card fraud as a greater proportion of transactions become contactless and electronic.

The U.S. may or may not choose to follow the EMV route, but it seems likely that if EMV standards do continue to gain traction around the globe, fraud costs will increasingly shift toward non-compliant areas.



2 Regulatory and Industry Initiatives

HIGHLIGHTS

The payments industry is evolving due to a combination of exogenous and endogenous forces; that pressure has intensified even further since the financial crisis and the combined forces of **key regulatory and industry initiatives** (KRIs) are now converging to drive change far into the future.

This Section outlines some of the many KRIs now under way, and evaluates their impact on the payments landscape. Among the key findings:

- **KRIs are at the heart of five main industry transformation trends** (ITTs), which together are reworking—or soon will—many aspects of the payments market and the positioning of participants. Those trends are:
 - **Systemic-risk reduction and control.** In the wake of the financial crisis, regulators are seeking to minimize systemic risk by imposing stricter requirements on capital and liquidity, but there is potential for unintended consequences, including in the way in which these standards can potentially change the economics of some business lines.
 - **Standardization** initiatives continue to improve efficiency, streamline processes and reduce costs. Some payments instruments and/or aspects of the value chain are becoming commoditized in the process, making it more difficult for banks to differentiate themselves in the market.
 - A drive for higher levels of **Transparency** is increasingly being seen in the payments industry. Several initiatives are focusing on making service fees to both corporate and retail clients more transparent, and this could have an impact on current business models.
 - **Convergence.** Developments in technology and evolving user and regulatory requirements are contributing to a gradual blurring of the lines between traditional payments activities supplied by infrastructure providers. There is more overlap, for example, between Low-Value (high-volume) ACH payments and High-Value (low-volume) RTGS payments. This type of convergence may increase competition between the RTGS and ACH systems for certain types of low-value payments.
 - **Innovation** remains one of the cornerstones of the payments industry. It allows players to specialize and to make use of emerging technologies and trends, such as mobile devices and contactless payments, to deliver state-of-the-art solutions. Non-bank PSPs—which tend not to be burdened by legacy infrastructures—may be better placed than many banks to leverage emerging technologies to satisfy user needs.
- **SEPA adoption levels reflect increased usage in the last year of SEPA Credit Transfers (SCTs).** On the other hand, SEPA Direct Debit (SDD) use is still extremely low. All stakeholders now agree on the need for a firm end-date for migration. The final text of the SEPA Migration Regulation looks likely to be agreed by the European Parliament and Council before the end of 2011 and potential end-date(s) of 2013-14 seem probable. Nevertheless, challenges and issues remain and discussions among stakeholders continue.
- **eGovernment initiatives are emerging as a key enabler of non-cash payments.** In countries where a mature eGovernment combines with developed non-cash payments infrastructure and behavior, conditions are especially ripe to trigger increases in overall non-cash payments usage.

NUMEROUS INITIATIVES ARE DRIVING CHANGE IN THE PAYMENTS LANDSCAPE

The payments system, as an integral part of the global economy, is continually subject to forces of change, but regulatory oversight has greatly intensified in the wake of the financial crisis, with implications for the operations and profitability of Financial Institutions (FIs). Initiatives such as Basel III and the U.S. Dodd-Frank Act are designed to reduce systemic risk and strengthen the ability of FIs to withstand systemic shocks. These initiatives are raising capital and liquidity requirements and, in turn, changing the economics of certain FI activities including payments, and potentially affecting the attractiveness of some business lines (see Trade Finance in Section 1, on p18 as an example).

At the same time, initiatives designed to improve transparency are targeting legacy fee and charging structures in relation to many payment instruments, most notably cards. The U.S. Durbin Amendment, for instance, was designed to give the government additional control over debit card “swipe fees” and the Canadian Code of Conduct for Cards assigns the Minister of Finance power to regulate the market conduct of cards networks.

In Europe, meanwhile, the Payment Services Directive (PSD) is now fully in force in all EU countries (with the exception of Poland at the time of writing), and the adoption of Single Euro Payments Area (SEPA) instruments, in particular the SCT, is starting to grow. The PSD and SEPA represent sweeping changes that seek to create a common legal framework and a standardized environment for euro payment services in the European Union (EU)—with a view to transforming the fragmented national payments markets of the Eurozone countries into a unified and highly competitive ‘domestic’ market.

Numerous other initiatives being formulated and implemented around the globe will also have an impact on payments. These measures, including examples such as the EU Digital Agenda (part of the Europe 2020 Strategy) and the International Payments Framework Association (IPFA) initiative to name but two, are further pushing the payments market toward increased levels of standardization, interoperability and de-fragmentation. (See Figure 2.1 for a Heat Map of some key regulatory industry initiatives on a global and regional level and the Sidebar for an overview of each initiative).

INITIATIVES ARE FUELING FIVE DISTINCT PAYMENTS INDUSTRY TRANSFORMATION TRENDS

The extent to which specific regulatory and industry initiatives have the potential to affect the payments industry is not always obvious at first sight. eGovernment initiatives, for example, are primarily civic schemes designed to enhance digital interaction between Public Administrations (PAs) and citizens and enterprises. However, the impact on payments could ultimately be substantial (also see Spotlight on eGovernment on p42) as public authorities are potentially powerful drivers of the move away from paper-based and cash instruments—a shift that will intensify competition between non-bank PSPs and traditional players.

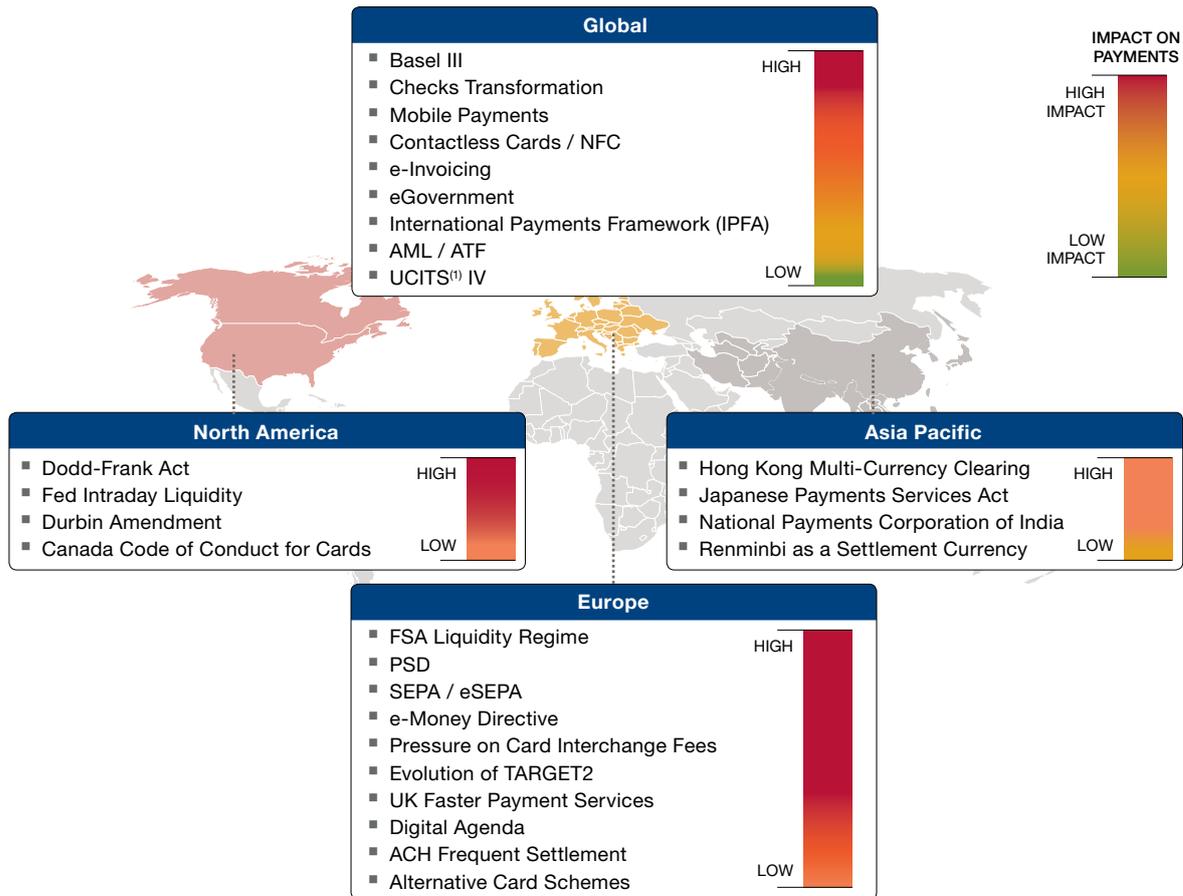
The objectives and scope of a number of initiatives have been evaluated on a heat map (see Figure 2.1) to show the impact on payments. Analysis shows that various initiatives are complementary in nature, and can together be expected to trigger an evolutionary path of transformation for the payments market and the behavior and attitudes of its participants.

Figure 2.2 maps each initiative into one of five major Industry Transformation Trends (ITTs)—with each initiative categorized by the single trend that best reflects its primary nature. In reality, some initiatives will also have a secondary and sometimes tertiary aspect.

This analysis helps to show how emergent trends have exerted regulatory and/or competitive pressure on banks and other PSPs in recent years, forcing them to adapt.¹⁸ It also provides insight into which transformation trends are likely to predominate in the next 5-10 years—prompting further adaptation.

¹⁸ For more detail on industry responses, see Section 3 of the WPR 2010, specifically references to the “Revenue-focused and Cost-focused” paths open to banks.

Figure 2.1 Heat Map of Key Regulatory and Industry Initiatives at a Global and Regional Level, 2010

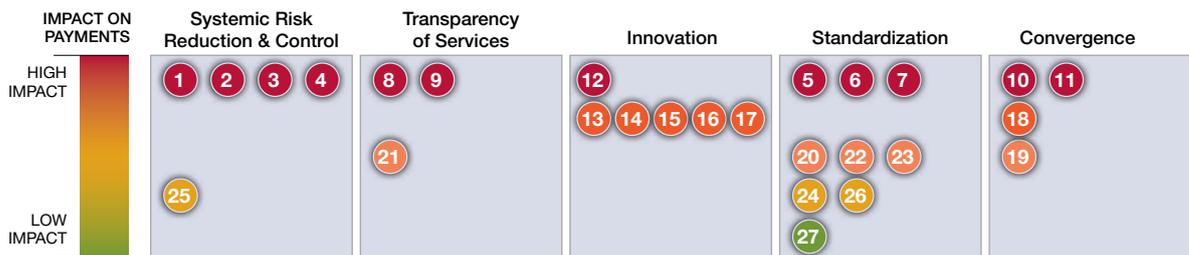


Note: Red denotes the regulation or initiative will have an impact in the near-term or the potential impact on payments business models, competition, and the industry is high. Green indicates the impact is either further in the future or its impact will be indirect or less significant.

¹ Undertakings Collective Investment in Transferable Securities

Source: Capgemini analysis, 2011

Figure 2.2 Five Industry Transformation Trends Driven by KRIs



KRII

- | | | |
|--------------------------------------|---------------------------------------|---------------------------------------------------------|
| 1. Basel III | 10. Evolution of TARGET2 | 20. Alternative Card Schemes |
| 2. FSA Liquidity Regime | 11. U.K. Faster Payment Services | 21. Canada Code of Conduct for cards |
| 3. Dodd-Frank Act | 12. Checks Transformation | 22. Japanese Payment Services Act |
| 4. Fed Intraday Liquidity | 13. Mobile Payments | 23. National Payments Corporation of India |
| 5. PSD | 14. Contactless Cards / NFC | 24. International Payments Framework Association (IPFA) |
| 6. SEPA / eSEPA | 15. e-Invoicing | 25. AML / ATF |
| 7. e-Money Directive | 16. eGovernment | 26. Renminbi as a Settlement Currency |
| 8. Pressure on Card Interchange Fees | 17. Digital Agenda | 27. UCITS ⁽¹⁾ IV Directive |
| 9. Durbin Amendment | 18. ACH Frequent Settlement | |
| | 19. Hong Kong Multi-Currency Clearing | |

¹ Undertakings Collective Investment in Transferable Securities

Source: Capgemini analysis, 2011

These ITTs may be developing alone or in conjunction with others, but each is a major change driver within the payments landscape.

SYSTEMIC RISK REDUCTION AND CONTROL

Since the financial crisis, regulators around the world have been in the process of increasing capital requirements and setting more stringent liquidity regimes for FIs. As a result of the Basel III proposals, the cost of capital and liquidity will increase. This includes implications for the cost and availability of intra-day liquidity in a payments context, which will see banks managing their positions and those of their customers in a real-time and more granular way in the future—and may reach a point at which some banks might need to reconsider their participation in certain business lines. FIs will also be increasingly focused on securing more stable sources of liquidity, such as retail deposits and prepaid cards, and may, in some cases, need to reshape aspects of their business models to acquire them. Conversely, liquidity and the increasingly sophisticated management of intra-day liquidity could become a differentiating and competitive edge for some banks.

STANDARDIZATION

Standardization is a powerful trend fueled primarily by the combination of:

- Regulatory initiatives that are aimed at increasing competition and improving consumer transparency and protection.
- Industry initiatives aimed at improving efficiency, reducing costs and streamlining the most automated elements of the payments value chain (i.e., the processing segments).

Standardization also results from initiatives developed individually or jointly by banks, Automated Clearing Houses (ACHs) and other PSPs seeking to boost transaction volumes and scale to expand existing businesses and generate additional revenues or facilitate new business models.

TRANSPARENCY OF SERVICES

In a payments context, transparency initiatives mostly focus on making service fees transparent to clients (particularly consumers). In the EU, for example, the PSD has a strong focus on enhancing the level of transparency, particularly in relation to charging. More generally, of all the instruments affected by this trend, cards are arguably feeling the most impact. Banks and other PSPs generate revenues from

various card fees, including debit-card ‘swipe’ fees and interchange fees. These fees are integral to the economics of the card business, so mandated changes will have a significant impact on current business models.

CONVERGENCE

There is an increasing blurring of a number of traditional distinctions between different types of payment systems, for example, between Low-Value (high-volume) ACH payments and High-Value (low-volume) RTGS payments. The Faster Payments System (FPS) in the U.K., a good example of this trend, is increasingly attracting volumes from both BACS and CHAPS.¹⁹ ACHs generally are shortening their clearing cycles in the process, sometimes making their services more attractive for Treasurers than those provided by the more costly RTGS systems, even for more urgent transactions. However, in the second half of 2010, more than 60% of payments in TARGET2 (the European Central Bank RTGS) were for amounts that it considers to be “retail payments” (less than €50,000), showing that while RTGS is designed for high-value payments, it also handles many low-value payments. As a result, RTGS is starting to compete with ACHs for certain types of low-value payments.

INNOVATION

Innovation, which fuels transformation, is currently being driven by several different and sometimes opposing forces, including:

- **Client needs**, with Corporate and Retail clients expecting ever more advanced and efficient solutions.
- **Technology**, which has been embraced by non-bank PSPs and leveraged by banks to bring speedy solutions and associated information to the market.
- **Competition**. An increasing level of competition from existing and emerging non-bank PSPs, which are often not burdened by legacy infrastructure, creates potential for agility in designing new solutions in the B2B, Business-to-Consumer (B2C) and P2P domains in the modern payments Industry.²⁰
- **Government initiatives**, including eGovernment programs all over the world and the Digital Agenda in the EU. (See the Spotlight on eGovernment on p42)
- **Industry initiatives** to keep costs low while competing for new revenue sources.

¹⁹ BACS (Bankers' Automated Clearing Services) is the electronic system that processes financial transactions (direct debits, direct credits and standing orders) for U.K. banks and in which clearing takes two working days. CHAPS (Clearing House Automated Payment System) is an RTGS system that offers same-day sterling fund transfers.

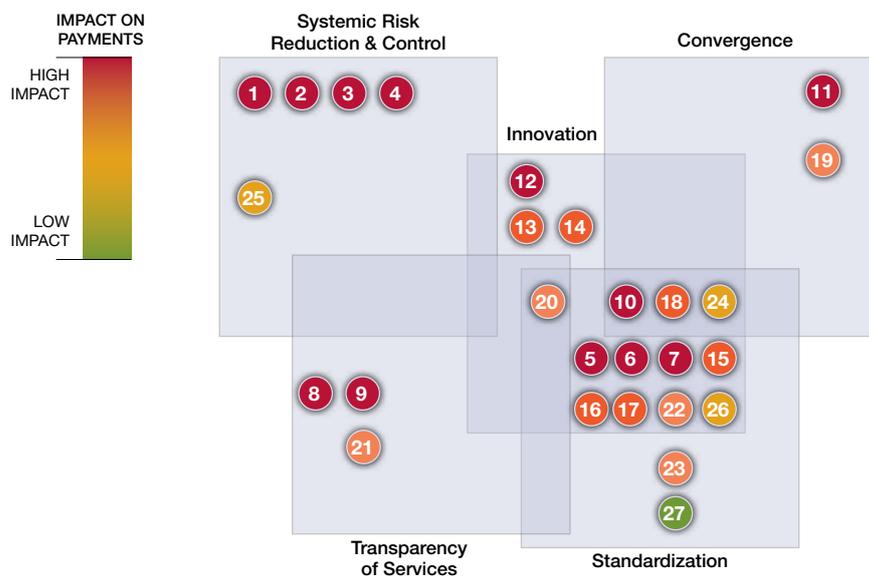
²⁰ For more detail, see Section 3, Chapter 1 of WPR 2010: “How the Payments Industry is Evolving”.

INNOVATION IS BEING DRIVEN BY MANY REGULATORY AND INDUSTRY INITIATIVES

While it is helpful to isolate the primary impact of each KRII on each of the five discrete ITTs, the reality is that many initiatives have aspects or drivers that relate to more than one industry trend. Figure 2.3 provides a more dynamic view of the compounded effects of the KRIs on the interconnected world of payments—in which many trends overlap.

In this dynamic structure, the diverse nature of initiatives such as ACH Frequent Settlement (#18) becomes more evident. The essence of this particular initiative lies in the blurring line between High-Value (low volume) RTGS payment systems and the Low-Value (high volume) ACH payment systems. It thus appears in the “convergence” cluster in Figure 2.2. More broadly, however, this trend could also be classified within the “innovation” cluster as only with the advancement of new technologies is it possible for ACHs to intensify settlement frequency. Ultimately, in looking at the overall payments landscape, this behavior is resulting in a de facto standard, and so it also appears in the “standardization” cluster in Figure 2.3.

Figure 2.3 Overlap of Industry Transformation Trends Driven by KRIs



KRII		
1. Basel III	11. U.K. Faster Payment Services	22. Japanese Payment Services Act
2. FSA Liquidity Regime	12. Checks Transformation	23. National Payments Corporation of India
3. Dodd-Frank Act	13. Mobile Payments	24. International Payments Framework Association
4. Fed Intraday Liquidity	14. Contactless Cards / NFC	25. AML / ATF
5. PSD	15. e-Invoicing	26. Renminbi as a Settlement Currency
6. SEPA / eSEPA	16. eGovernment	27. UCITS ⁽¹⁾ IV Directive
7. e-Money Directive	17. Digital Agenda	
8. Pressure on Card Interchange Fees	18. ACH Frequent Settlement	
9. Durbin Amendment	19. Hong Kong Multi-Currency Clearing	
10. Evolution of TARGET2	20. Alternative Card Schemes	
	21. Canada Code of Conduct for Cards	

¹ Undertakings Collective Investment in Transferable Securities
Source: Capgemini analysis, 2011

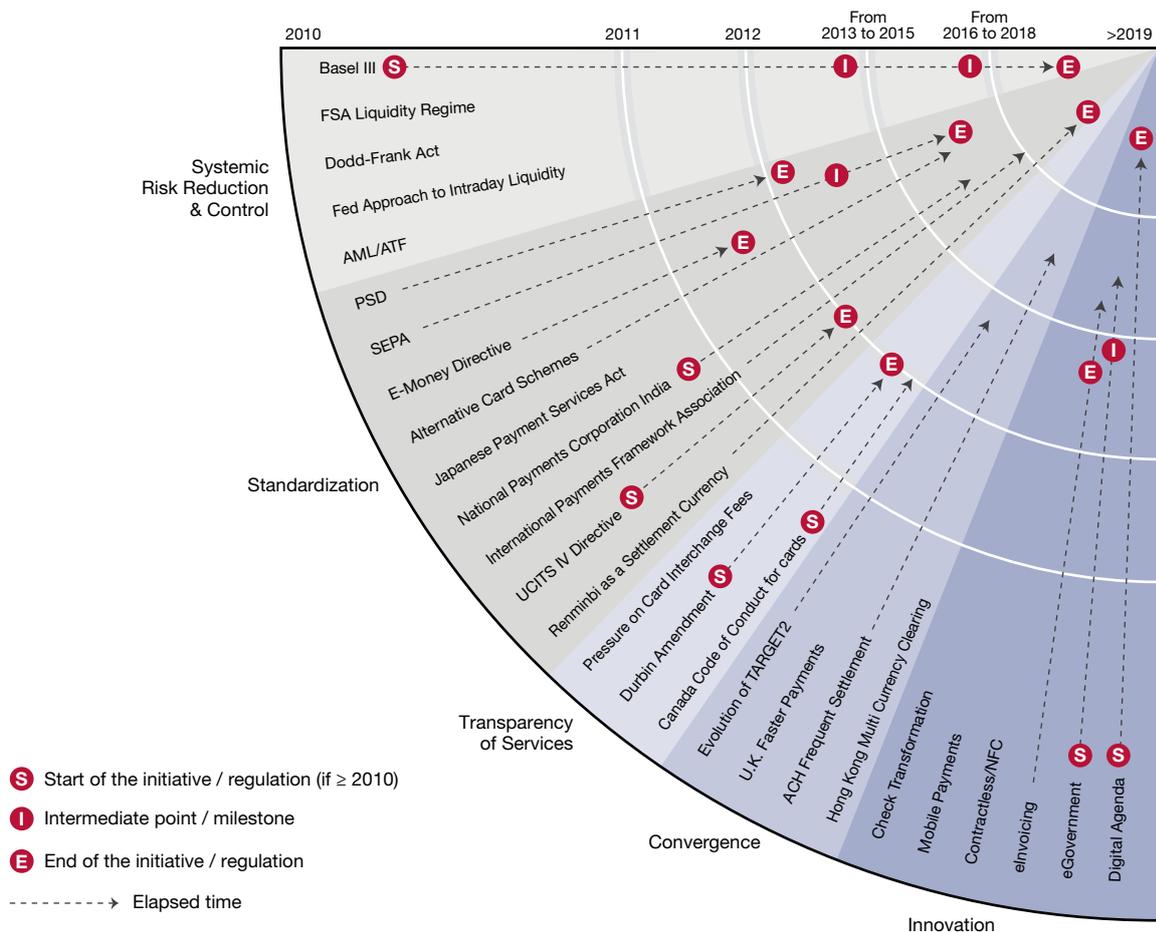
THE INDUSTRY TRANSFORMATION MAP

The pressure exerted by KRIs will increase over time. As product/service margins decrease and bank liquidity and capital costs increase, industry players will need to gauge the effects and reshape their business models accordingly—if, that is, they want to continue providing the same services to their clients efficiently and effectively. Moreover, as the trends of standardization and convergence increase international competition and potentially reduce margins for banks and non-banks, innovation and emerging technologies could be expected to deliver competitive advantage to certain market players.

Figure 2.4 provides an Industry Transformation Map that shows a high-level picture of how the KRIs identified herein may evolve in the next decade. This perspective illustrates the complexity of the global transformation of the payments industry—and shows just how many factors, events and conditions industry players, including PSPs, have to deal with in the evolving landscape.

Not all of the KRIs included in the Transformation Map contain a distinct start, intermediate, and end marker, since some are market-driven initiatives whose lifecycles are difficult to determine. (Time markers specified on the figure are largely indicative of events within the lifecycle of each KRI.)

Figure 2.4 Payments Industry Transformation Map, 2010–2019



Source: Capgemini analysis, 2011

**CONCLUSION: TRANSFORMATION PRESSURES
EXTEND FAR INTO THE FUTURE**

When discussing global or regional regulatory initiatives like Basel III or the PSD, it might seem that the regulations will create a level playing field for all players in all impacted countries, but this may not always be the case. The potential for differing domestic interpretations presents particular challenges for those banks and corporates that operate in multiple jurisdictions.

Additionally, while individual regulatory and industry initiatives have finite parameters and goals, few involve a “Big Bang” revolution. Most involve a series of component measures that are phased in over time—often creating an impact at the same time as other related or unrelated initiatives. Even analyzing and extrapolating just those initiatives identified in this Report, it is clear that payments transformation will be extensive throughout the coming 10 years—presenting banks and other PSPs with multiple factors and scenarios to consider as they plan future strategies.

Not only will industry players need to continue to identify, assess and select market opportunities, they must do so while simultaneously managing growing compliance and liquidity costs, and anticipating how other parts of the industry and market will react (e.g., the strategies and ambitions of competitors and partners and evolving client needs). Moreover, internal decision-making will increasingly need to accommodate a greater number of factors and perspectives, requiring closer interaction, for example, with the Risk Management and Treasury functions.

As more initiatives converge in the future, industry transformation will intensify. As product/service margins decrease and bank liquidity and capital costs increase, industry players will need to gauge the effects and reshape their business (and delivery) models accordingly to keep pace with clients’ expectations while also providing services in an ever more efficient and effective way.

The trends of standardization and convergence (and transparency, to a certain extent) will increase the level of competition and accelerate the commoditization of payments, making it more difficult for individual banks and non-bank PSPs to differentiate and prove their value. Innovation, emerging technologies, and partnerships can, however, help them to differentiate their services and achieve competitive advantage.

It is likely that in future, banks will find it harder to operate on a standalone basis in relation to all aspects of the payments value chain, and the majority might have to specialize in certain segments over time, as we will explore further in Section 3.

Key Regulatory and Industry Initiatives

Key #	Key regulatory and industry initiatives (KRILs)	Description
1	Basel III	The Basel Committee issued the text of Basel III rules on bank capital adequacy and liquidity in December 2010. Endorsed by the G20, “Basel III” aims to raise capital levels and quality standards and promote the build-up of capital buffers, enhance risk calculations and coverage, cap leverage ratios, and additionally plans two liquidity ratios—the Liquidity Coverage Ratio (LCR, to be met by 2015) and Net Stable Funding Ratio (NSFR, to be met by 2018)—to address short and longer-term liquidity needs.
2	U.K. FSA Liquidity Regime	The U.K. Financial Services Authority (FSA) overhauled liquidity regulation for U.K. banks with effect from October 2009. Among the changes, the FSA has set new quantitative requirements on liquidity and tightened the definition of liquid assets; stipulated the principles for self-sufficiency and adequacy of liquid resources; enhanced systems and controls requirements; and demanded more frequent reporting requirements. The FSA is phasing in tougher quantitative standards in stages.
3	U.S. Dodd-Frank Act	The Dodd-Frank Act, law since July 2010, contains a set of reforms on a wide range of regulatory and supervisory topics, with provisions relating to capital, liquidity, and risk requirements for U.S. financial institutions. Dodd-Frank and Basel III have similar objectives but not all standards and implementation schedules are the same.
4	U.S. Fed Intraday Liquidity	The U.S. Federal Reserve amended its Payment System Risk (PSR) policy in March 2011. Most notably, the revisions encourage institutions to voluntarily pledge collateral to cover daylight overdrafts by providing such overdrafts at a zero fee while raising fees for uncollateralized daylight overdrafts. Any depository institution with regular access to the discount window may incur daylight overdrafts, with specific rules and caps.
5	EU Payment Services Directive (PSD)	Designed to create a common legal framework for payment services in the EU, increase international competition and harmonize rights and obligations for PSPs, the PSD was transposed into the national law of most EU Members during 2009-10. The PSD has an impact on all payment services in the EU, including changes to charging options (the move to shared ('SHA')), reductions in maximum execution cycles and the removal of 'incoming float'. To increase competition, PSD removed legal obstacles and entry barriers so that new non-bank PSPs (Payment Institutions) can offer payment services.
6	SEPA / eSEPA	SEPA, a self-regulatory response to a political vision, seeks to provide harmonized payment services (credit transfers, direct debits, cards) where € payments within the EU will be treated as domestic payments with the aim of eliminating cross-border barriers and increasing competition across Europe (also see SEPA Update on p40). SEPA will continue to impact payments pricing, standardizing processes and streamlining the Industry. eSEPA commonly refers to innovations in payments and other areas which are expected to emerge on the back of the delivery of the core SEPA infrastructure (SCT/ SDD), providing various retail payment services electronically so as to offer easier access, better functionality and an enhanced user experience.
7	EU E-Money Directive (EMD)	Electronic money is a digital equivalent of cash, stored on a device, server, mobile phone, electronic purse. etc. The new E-Money Directive (2009/110/EC) aims to enable innovative and secure e-money services, provide market access to new companies, foster effective competition, and bring the regime for e-money institutions into line with the PSD requirements for Payment Institutions. The EMD rules were required to be in force in all EU countries by April 30, 2011.
8	Pressure on Card Interchange Fees	Regulators in the EU and elsewhere are currently putting pressure on Multilateral Interchange Fees for cards (See #9 and #21 below). These include industry-wide regulations on swipe fees, direct rulings on specific competitors, and improved guidelines on transparency and competition.

Key #	Key regulatory and industry initiatives (KRIs)	Description
9	U.S. Durbin Amendment	This is a provision in the Dodd-Frank Act, section 1075, allowing the Fed to control the swipe fees on debit cards with a cap that results in an approximately 50% decrease in current fees that will come into effect in October 2011. The goal is to aid merchants and (indirectly) consumers with lower interchange fees.
10	Evolution of TARGET2	TARGET2 is the European Real Time Gross Settlement (RTGS) system, and it was set up to settle euro Large-value transactions in real time. The ECB and Eurosystem are planning for its further evolution, including eventually adopting XML ISO 20022 standards.
11	U.K. Faster Payment Services	The Faster Payment Service, launched in 2008 in the U.K., is a banking initiative that allows for retail payment transactions to be exchanged between scheme participants in near real-time. The participant banks make up 95% of payments traffic in the U.K.
12	Checks Transformation	There is a major trend in the payments industry leading to a general decrease in the use of checks in favor of more efficient instruments. This trend is also a result of active initiatives carried out by governments and/or banking communities. There are two prevalent approaches: moves towards further check reduction and potential decommissioning (as in Sweden) and check digitalization (as in the U.S.). See Checks Spotlight on p22.
13	Mobile Payments	M-payments (payments for goods and services using mobile devices) have been growing quickly for several years. Emerging markets are now larger than developed markets in terms of m-payments value, and continue to grow at a faster rate. Non-bank providers of m-payments are gaining market share and currently growing twice as fast as traditional banks in this area.
14	Contactless Cards / NFC	NFC is a short-range wireless technology, increasingly popular for micropayments and POS transactions. Contactless cards should allow banks to potentially shift small payments from cash to non-cash. Interac has carried out a series of contactless POS debit transactions in Canada. VISA Paywave and MasterCard PayPass are contactless credit cards that are widespread in the U.S. and U.K., as well as present in APAC and the EU.
15	e-Invoicing	e-Invoicing is a global trend. In the EU, Invoicing Directive 2010/45/EU aims to harmonize invoicing rules allowing tax authorities to accept electronic invoices as if they were paper. In the U.S., 2001 Code Title 10, Section 2227 states that "all invoices to the Department of Defense must be electronic". In Brazil, the "Nota Fiscal Eletronica" (NF-e) is legally replacing the conventional bill of lading.
16	eGovernment	eGovernment involves the use by governments of Information and Communication Technology (ICT) to inform and render services to citizens and businesses. Payments means are affected as eGovernment extends into eProcurement, e-Invoicing, and ePayments—see Spotlight on eGovernment on p42.
17	Digital Agenda	The Digital Agenda for Europe is one of the seven flagship initiatives of the "Europe 2020 Strategy". It aims to: maximize the social and economic potential of ICT (most notably the Internet); create a single EU digital market by harmonizing technical, regulatory, and legal frameworks; and promote interoperability between Member States' eGovernment programs.
18	ACH Frequent Settlement	Nowadays, most of the largest worldwide ACHs (such as STET, VocaLink, EQUENS, JGB) are performing more and more frequent settlement and clearing cycles. For example, EQUENS currently performs a settlement cycle every half hour on each TARGET day (between 09:00 and 16:00 CET), with extra cycles at 16:15 and 16:45 CET. This offers the advantage of low settlement account balances, and lower liquidity risk.
19	Hong Kong Multi-Currency Clearing	Due to its capacity to settle transactions in multiple global currencies, Hong Kong could become the payments and settlement hub for Asia-Pacific. If an FI in Asia-Pacific wishes to carry out an FX transaction involving local currency and the USD, the local currency leg can be settled in the home country and the USD leg in Hong Kong, effectively reducing counterparty risk (so-called Herstatt risk).

Key #	Key regulatory and industry initiatives (KRIs)	Description
20	Alternative Card Schemes	<p>Monnet, a European cards scheme project to compete with Visa and MasterCard networks, was launched by several German and French banks in 2008. Several more EU banks joined in 2010.</p> <p>PayFair, founded in 2007, is a retailer-driven initiative set up as a neutral alternative between banks and merchants, respecting the SEPA philosophy of unbundling the scheme and its processing.</p> <p>EAPS (Euro alliance of payment schemes), established in 2007, aims to create an interconnected network of independent card schemes, banks, acquirers and PIs from Italy, Germany, Spain, Portugal and the U.K.</p>
21	Canada Code of Conduct for Cards	<p>With the Payment Card Network Act, the Canadian Minister of Finance has the power to regulate the market conduct of credit and debit card networks. The goal is to promote competition and fair business practices that translate into lower costs for merchants and lower prices to the consumer. This can reduce industry revenues, with increased competition and lower profit margins, and reduced usage (in favor of other payment methods).</p>
22	Japanese Payment Services Act	<p>Prior to April 2010, only banks and certain other Financial Institutions were permitted to engage in fund transfer services in Japan. Now the Payment Services Act has allowed non-bank entities to conduct fund transfer services in Japan provided that they are registered as “fund transfer business operators”; and that the amount of funds to be transferred per customer request does not exceed ¥1m (€10,000 or the foreign currency equivalent).</p>
23	National Payments Corporation India (NPCI)	<p>NPCI is an umbrella institution for all retail payment systems in India. It aims to integrate multiple systems into nationwide, uniform and standard business processes. NPCI will function as a hub for all electronic retail payment systems. It now manages: the National Financial Switch (NFS), an interbank network of ATMs; check truncation services in key cities; and the Interbank Mobile Payment Service (IMPS), an instant interbank electronic fund transfer service through mobile phones. Another goal for NPCI is to establish a national card scheme like China UnionPay (CUP).</p>
24	International Payments Framework Association (IPFA)	<p>IPFA is an association that aims to simplify and standardize international non-urgent payment systems through the use of global standards. On October 2010, initial live traffic between two IPFA members, the Federal Reserve Banks in the U.S. and EQUENS in Europe began; extensions are planned to Canada, Mexico, Brazil and South Africa in 2011. IPFA is aiming for greater levels of standardization and easier international flows. Other consequences could include a higher degree of commoditization and also specialization (see Section 3).</p>
25	Anti-money laundering / anti-terrorism financing (AML/ATF)	<p>Section 314(b) of the USA PATRIOT Act, which aims to fight anti-money laundering (AML) and anti-terrorism financing (ATF), requires FIs to conduct due diligence on new and existing customers and maintain complete records of all transactions. This makes payments more costly and slows down straight-through processing (STP). The positive for PSPs is that they gather more information about their clients to help improve services.</p>
26	Renminbi as a Settlement Currency	<p>In December 2008, China started using the yuan as a settlement currency on foreign deals with neighboring economies. Cross-border yuan trade settlement is expected to grow from Rmb 506 billion (US\$77 billion) in 2010 to Rmb 2 trillion (US\$300 billion) in ten years. This initiative is likely to draw a market distinction between banks that are able or not to trade in yuan. The growing importance of the yuan will also accentuate the value of Hong Kong as a multi-currency clearing and settlement hub (see #19).</p>
27	EU UCITS IV Directive	<p>The fourth modification to Directive 85/611/EEC (Undertakings for Collective Investments in Transferable Securities) aims to achieve higher integration and efficiency of EU markets, allowing more mobility in managing international funds, remote establishment and cross border management of UCITS funds and centralization of asset management. Member states were expected to transpose the Directive into national legislation by July 2011. Due to easier mobility and international funds management, higher international payments flows are expected, but also higher competition due to lower barriers in EU.</p>

SEPA at a Glance

The Single Euro Payments Area (SEPA) has 32 European country members to date (the 27 members of the European Economic Area, together with Iceland, Liechtenstein, Norway, Monaco and Switzerland), enabling more than 458 million citizens to execute SEPA payments. The SEPA initiative is supported by the Payment Services Directive (PSD), which provides the legal foundation for creating a single market for payments across the European Union (EU), establishing a modern and comprehensive set of rules applicable to all payment services in the EU. New entities, formally known as Payment Institutions, are starting to operate in the market. What has been missing until now has been clear end-dates for migration to the SEPA Credit Transfer (SCT) and SEPA Direct Debit (SDD) schemes. However, a draft EU Regulation to bring the necessary level of certainty on dates was published by the EU in December 2010. Definitive end-dates should help ensure that the benefits of SEPA can be achieved and that the high costs of running both legacy and SEPA products can be eliminated, thus achieving a single market and improving efficiency and competition in the process.



— **Setup of EPC and SEPA Project launch after the Lisbon Agenda 2000**



— **Adoption of PSD as the legal basis for SEPA**



— **Launch of SCTs**



— **Launch of SDDs and deadline for transposition of the PSD into Member State Law**



— **All accounts reachable for national DD must be reachable for SDD (Regulation 924/2009)**

— **Full EMV migration and certification framework for terminals**

— **Draft EU regulation issued, proposing technical requirements and end-dates for SCT and SDD**



— **Legislative Path for the European Commission (EC) Proposal for SEPA migration end-date Regulation**

— **Framework for card transaction processing implementation**



— **Potential End-Dates for migration to SCT and SDD**

SEPA Update

The following provides a brief update on key SEPA developments since the comprehensive overview provided in the WPR 2010:

- **PSD implementation:** The vast majority of member states have transposed the PSD into national law. At the time of writing, Poland and Iceland are the only EU/EEA countries still to complete this task.
- **SCT and SDD usage:** In May 2011, SCTs accounted for 19.37% of all eligible bank credit transfers, up materially from 9.6% in October 2010, while the volume of transactions rose to over 109 million from 49 million. SDDs, by contrast, still accounted for only 0.11% of all eligible direct debits in May 2011, equivalent to 0.69 million transactions. While the use of SEPA instruments is clearly broadening (see public-sector use below), there is still a long way to go.
- **Public Administration (PA) usage of SEPA:** As of October 2010, the SCT migration rate among PAs for the first time exceeded the corresponding rate for the overall market (14.5% vs. 9.6%), with the most significant growth reported by Finland, Belgium, Austria, Spain, France and Germany. SDD migration so far remains marginal, partly as few PAs use DDs as a payment means. Notably, countries with the fastest rates of migration growth also predominate in eGovernment development (i.e., their services are highly sophisticated and accessible and have a low take-up gap). Finland is one of the few cases in which the government, users and banks are cooperating fully to adopt SCT within 2011.
- **eSEPA Models:** The EPC has been continuing with its work on various eSEPA initiatives, with ongoing work on e-Mandates, e-payments and m-payments. Additionally, the EC is also pushing on with its work on e-Invoicing. Nevertheless, all of these future-looking developments hinge first on the successful migration to SCT and SDD.

SEPA MIGRATION END-DATE

Given the slow rate of adoption and the significant benefits at stake, many stakeholders, including the ECB and the EPC, reached the conclusion during 2010 that targeted EU legislation was needed to establish end-dates for the replacement of the national legacy payment schemes by the harmonized SEPA schemes. EU legislation to support SEPA is not a new concept. The PSD had already provided initial support by providing a harmonized legal environment and EU Regulation 924/2009 went further by requiring that all banks offering domestic euro direct debit services within the Eurozone had to make themselves reachable for SDDs by November 1, 2010. But a clear end-date for the migration process was still missing.

Against this background, the most important SEPA development since our WPR 2010 update is the December 2010 publication by the EC of a proposal for an EU Regulation *'Establishing technical requirements for credit transfers and direct debits in euros and amending Regulation EC 924/2009'*. As published, some aspects of the proposed Regulation have proved to be controversial. The EPC and many other stakeholders had been hoping for a 'clean' approach simply requiring existing domestic euro retail payment schemes to migrate to the SEPA schemes. However, in practice, political and competition sensitivities resulted in a much more complex proposal, based on mandating a set of guiding principles on technical standards that all euro retail credit transfer and direct debit schemes would have to meet by certain end-dates. Those dates—12 months after the 'in force' date of the Regulation was proposed for credit transfers and 24 months for direct debits—potentially put those end-dates at end-2012 and end-2013 respectively, assuming the Regulation is finalized by the end of 2011.

Enshrining technical details in a legal text always entails challenges. One potential risk, for example, is that the Regulation might inadvertently allow for divergence and continuing variations to messaging formats at the national level—and potentially even the continued existence of national payment schemes alongside their SEPA equivalents. This would result in a ‘mini SEPA’ outcome, where different requirements and schemes continue to co-exist, forcing companies and their banks to maintain different processes and systems for different countries and significantly diluting the benefits of SEPA. Avoiding a mini-SEPA outcome will require the final wording of certain core definitions and principles in the Regulation (particularly the key concepts ‘Reachability’ and ‘Interoperability’) to be particularly carefully drafted.

Another specific issue that has provoked discussion is that, as published, the scope included customer payments made via ‘Large Value Payment Systems’ (such as TARGET2), not just via retail payment systems. Following widespread expressions of concern that this would have meant major additional and unexpected adjustments costs across the industry, all the key parties now seem to accept that transactions through these systems need to be excluded from the scope.

The topic of per-transaction Multilateral Interchange Fees (MIFs) for DDs continues to be a hotly debated issue. The EC proposal is to ban all per-transaction DD MIFs after a transition period, except in the case of ‘R-transactions’ (such as returned payments). The whole MIF issue is a very delicate one, especially because MIFs are a fundamental element of the business models within a number of EU countries, such as France and Italy, and finding an acceptable compromise is proving to be a challenge.

On all of these topics, the opportunity for changes still exists at the time of writing, as the Regulation is subject to the usual EU ‘co-decision’ process—meaning that before it can be formally adopted, it needs to be negotiated and formally agreed between three bodies—the European Parliament and Council as well as the Commission. So with this objective in mind, dialogue is continuing with the Regulatory community, particularly via key industry bodies, including the EPC and the European Banking Federation (EBF) via its Payment Regulatory Expert Group. At the moment, everything remains on track to finalize the Regulation by the end of 2011, but it is clear that the few months before that will be pivotal.

Once the SEPA Regulation is agreed and comes into force, and the adoption of SEPA instruments finally takes off, this will in turn drive the business case for further innovative developments, such as e-mandates and e-payment solutions, that are dependent on the success of the core SEPA migration. Similarly, efforts to make e-invoicing a reality—a bigger prize for many corporates than SEPA itself—are expected to accelerate as SEPA gains ground.

Separate discussions are continuing over how to optimize SEPA governance. As the SEPA schemes continue to evolve, it remains an issue how to balance the needs of European citizens, businesses and retailers. The SEPA Council has been established to represent both the demand and supply sides of the market in driving SEPA forward and would seem to have a major role to play here.

eGovernment Efforts Could Help to Drive Non-Cash Adoption

“eGovernment” in its broadest sense involves the use of Information and Communication Technology (ICT) by governments to inform and render services to citizens and businesses. In payments, eGovernment involves electronic procurement, invoicing and payments to and from citizens, businesses and government agencies.

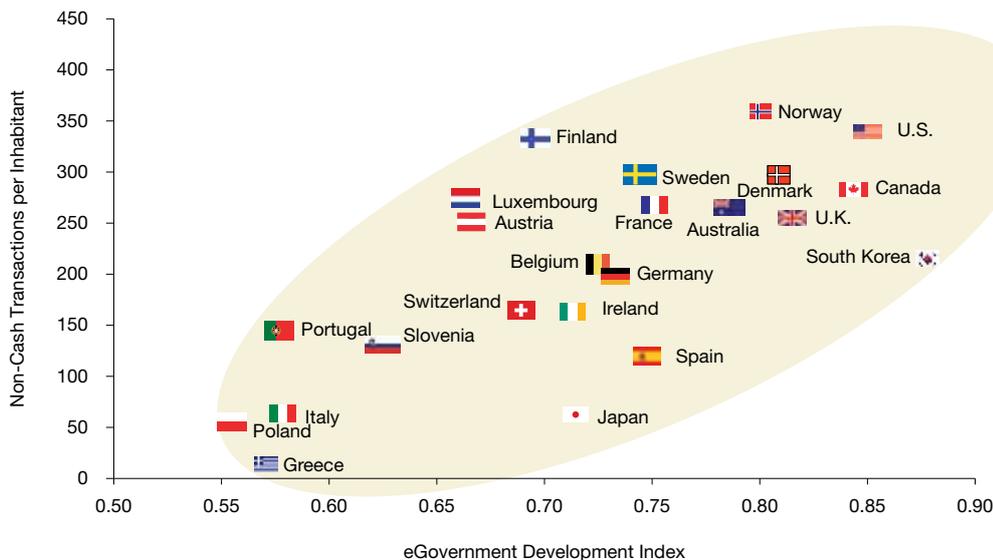
eGovernment is potentially beneficial for all payments stakeholders. Electronic transactions—by Internet, mobile, wireless devices and other digital media—are generally quicker and more convenient, cost-effective and secure than paper-based predecessors such as cash and checks.

Many governments are now actively investing in eGovernment, and continued with those investments even during the financial crisis. According to a 2010

United Nations survey on eGovernment,²¹ South Korea has the world’s most developed eGovernment, followed by the U.S., Canada, and the Nordic EU countries. It is interesting to highlight (Figure 2.5) the relationship existing between the usage per inhabitant of non-cash payments instruments and the eGovernment index (also see Section I, Figure 1.4 for detail on growth of non-cash transactions usage per inhabitant).

In countries where a mature eGovernment combines with developed non-cash payments infrastructure and behavior, conditions are especially ripe for accelerating the move away from cash and paper-based payments instruments.

Figure 2.5 eGovernment Development Index and Non-Cash Transactions per Inhabitant



Source: Cappgemini analysis, 2011; United Nations global eGovernment survey 2010

²¹ “2010 United Nations e-Government Survey: Leveraging e-government at a time of financial and economic crisis,” completed in December 2009, and launched in early-2010. The survey measures three indicators: online services, telecommunication infrastructure, and human capital.

The U.S. and Canada are actively pursuing eGovernment, and have well-developed portals and a wide spectrum of e-services for their citizens. Among their specific payments initiatives:

- The U.S. launched Pay.gov, a secure government-wide collection portal, in 2000. It offers a suite of online services that Federal agencies can use to meet their responsibilities toward the public. The web-based application allows client interaction and online payments to more than forty government agencies (including the Health, Defense and Justice departments) by ACH debit or credit card.
- The U.S. Treasury Department, as part of an ongoing campaign to increase ePayments,²² has also started to shift its social security and Federal benefits payments from checks to ePayments (direct debit or prepaid cards). It hopes as a result to reduce government expenses by \$1 billion over the next 10 years.²³
- Canada, which has a robust national eGovernment portal, launched a new user-friendly procurement Website in 2010 (buyandsell.gc.ca). It provides Canadian businesses with an easy way to access information and execute business transactions with the government.

Europe also has many eGovernment initiatives under way. The European Commission's Digital Agenda calls for developing cross-border eGovernment services for citizens and businesses, regardless of their country of origin,—by promoting systems interoperability and key enablers such as e-payments, e-Signatures and e-Identification. Services accessible across the EU strengthen the single digital market and complement existing legislation in domains such as eidentification, e-Procurement, e-Justice, e-Health, mobility and social security.

e-Procurement is one of the high-impact services representing a major portion of Europe's economy—some €1.3 trillion in public administration expenditure. In terms of cross-border e-Procurement in the EU, the main initiative is PEPPOL: Pan-European Public Procurement Online. The goal of this project is to set up a pan-EU solution that facilitates interoperable public e-Procurement. However, in the post-award phases of the e-Procurement process, the availability of e-Invoicing and e-payment services is somewhat problematic, suffering from legal and practical barriers.²⁴

To help overcome these barriers, EU governments are working toward digitalization in payments and invoicing. In some member States, the public sector has launched or is preparing to launch initiatives to make eInvoices mandatory in public contracts. Denmark mandated eInvoicing for the public sector in 2005, Sweden in 2008, and Finland in 2010. Italy, Estonia, Spain, and France are likely to follow soon, and other countries such as Belgium and Austria are also considering it.

CONCLUSION

Governments can be a driving force in non-cash payments adoption because they affect such large economic segments. Some, for example, are already moving salary and social-benefit payments online, and many now allow and encourage online tax payments.

One of the goals of such initiatives is to capture efficiencies and cost-savings from substituting manual processes, but eGovernment requires the ability to initiate and accept a broad range of electronic transactions, so governments need to work closely with PSPs to facilitate a full suite of appropriate electronic-payments solutions.

²² <http://www.godirect.org/>

²³ "U.S. Treasury prepares to retire checks", finextra.com.

²⁴ This problem will be easier to solve once SEPA has completely migrated on core products, allowing secondary products such as e-Invoicing (and eSEPA in general) to become a reality.



3

Capturing the Value in Payments as the Industry Transforms

HIGHLIGHTS

Forces of standardization and commoditization are evident and intensifying in payments, and regulation is changing both the operational standards and economics of many payments business lines. Payment options are also proliferating,—especially as an increasing number of non-bank players emerge, often bypassing existing providers to engage customers directly.

In this environment, the imperative for banks and PSPs going forward will be to distinguish their propositions and demonstrate their value through increased specialization. This Section outlines some of the issues they will need to consider:

- **Banks and PSPs could learn lessons from the evolution of other network industries such as Energy and Telecommunications.** Both industries have been subject to forces of regulation, liberalization, commoditization and technological advances, which have combined to prompt innovation from service providers seeking to distinguish themselves and their propositions. In both cases, as underlying products and services became more standardized, the industry value chains disaggregated and the production and distribution ends of the industry value chain became polarized, giving rise to specialist business models.
- **Many banks may find that the efficiency of the traditional integrated “produce-to-deliver” payments model is no longer optimal.** The traditional approach in which banks handle everything—from developing propositions to producing payments, managing client relationships and offering a whole series of other services to their clients—may no longer prove optimal when dealing with current industry challenges. If the payments value-chain disaggregates in the way seen in Energy and Telecoms, the “produce-to-deliver” model could over time be supplanted by a “produce-or-deliver” model for many institutions.
- **In the mid-to-long term, many PSPs could evolve into one of two specialist roles— Wholesale Payments Provider (WPP) or Retail Payment Services Provider (RPSP)—**since few are likely to have the scale, capabilities, strategic ambition or will to pursue both ends of the value chain as it disaggregates. (WPPs would provide low-cost basic payments and RPSPs would focus on one or a few of the client-facing segments of the payments value chain).
- **In the near-term, banks need to consider what role they might play in the future,** and prepare for any potentially radical shifts. Evolving into a WPP, playing the RPSP role, or preparing to assume both roles requires vision and imposes strategic decisions. In any event:
 - **Innovation is vital for banks and PSPs to be proactive and strategic in the near-term.** Mastering innovation will allow banks and other PSPs (mainly RPSPs) to differentiate their propositions and to prove their value as the payments industry progressively becomes more commoditized.
 - **Innovation will continue be critical to the future success of banks and other PSPs,** and the degree to which they succeed in delivering and creating value in both the near-term and the mid-to-long term. Many players will need to stretch beyond their comfort zones when positioning for longer-term success, even though opportunities may remain firmly in their grasp in the shorter-term.

Evolution in Other Industries Offers Insight on Payments

To ascertain where value pools will lie in the payments market of the future, it is useful to consider other industries that have undergone similar changes. For payments, that means looking at industries in which industry regulation, liberalization, commoditization and technological advances have converged, prompting innovation from service providers to distinguish themselves and their propositions. Two prime examples are Energy and Telecoms.

In both cases, as underlying products and services became more standardized, the industry value chains disaggregated. In the process, the production and distribution ends of the value chain became polarized and specialist models were developed to cater to the unique needs at each end of the chain. It seems possible that this type of value-chain disaggregation could also result in new business specialization in payments:

- Producing “Basic Payments” requires operational excellence, volume scale and cost leadership.
- Distributing value-added services (VAS) requires a deep understanding of customer businesses, and the ability to build a distinctive set of products and services.

Additionally, in such an environment, sourcing strategies, partnerships and enabling platforms like Payments Hubs (described in WPR 2010) will be increasingly critical to success for banks and PSPs, especially given the kind of trends seen in Energy and Telecoms.

ENERGY INDUSTRY – HIGH LEVEL OF SPECIALIZATION²⁵

The Energy industry value chain has constantly evolved under pressure from technological progress and regulation, especially the global deregulation drive of the past 15 years or so. In the process, the energy value chain has separated, creating distinct business propositions in each segment.

Companies can still operate in all segments, but vertically integrated monopolies have become less common. Indeed, specialist players have emerged to

cater to specific needs within the value chain (generation, wholesale, distribution, retail, aggregation). Energy is by definition a commodity so retailers have strived to develop differentiators to retain or attract customers. These include new billing and payment services, such as monthly payments or web-based invoicing and settlement, provided in some countries via banking partnerships.

The drivers of success differ by specialty. For those companies pursuing customer intimacy and product leadership as their strategic goals, agility is a key differentiator; for those focusing on production and volumes, operational excellence is the main competitive advantage. These specialties are at opposite ends of the value chain and the tension between them has separated the value chain into more distinct parts: Upstream, there are companies focused on volumes and operations excellence; and Downstream, companies are focused on customer relationships and services:²⁶

- **Upstream Players.** Energy-generation companies focus on cost and operational excellence: The complexity of producing energy at low cost has led to technical collaboration between industry participants, while value has been maximized through increased efficiency and higher production volumes. Achieving cost/quality leadership is vital in this sector. Similarly, wholesalers focus on high volumes, high speed, low costs per transaction (usually) and highly secure systems.
- **Downstream Players.** Retailers focus on customer intimacy, providing multiple commodity supply services such as performance contracting, energy management, consolidated billing, and commodity management. Distributors focus on maximizing the value of customer interactions, leveraging customer relationships and offering a broad range of products and services, as well as product leadership. This is done, for example, by partnering with retailers/commodity providers and/or expanding sales within the existing customer base.²⁷

²⁵ Based on Capgemini Energy & Utilities Sector expertise, papers and analysis from Meta Group.

²⁶ We hereafter use “Upstream” to identify the production or wholesale part of the business and “Downstream” to refer to the client-facing component. This terminology, while used primarily in manufacturing, is also fitting for payments in the transformation context used in this Section.

²⁷ For example, companies like ENEL Produzione (in Italy) and Iberdrola (in Spain) produce and offer electricity to the wholesale market; while companies like ENEL Distribuzione, Sorgenia, A2A, Edison (in Italy), Iberdrola Distribución, HC Energia – Grupo EDP and Union Fenosa (in Spain) provide electricity services to clients.

**TELECOMMUNICATIONS INDUSTRY –
MNOS VS. MVNOS²⁸**

Telecoms, especially the mobile component, has undergone a profound transformation due to technological advancements, regulation and de-regulation, and the proliferation of new market entrants and competition. The standardized nature of delivery, given international agreements on systems and infrastructure²⁹ and de facto standards (e.g., Internet protocols) has combined with national and international regulations on interoperability and mobility to push the market toward increased competition and commoditization—and has separated the value chain.

In addition, the most potentially lucrative segments of the value chain have been the subject of competition from new global players, such as Google, Apple, Amazon, eBay, which have been able to provide over-the-top (OTT) networked services without the burden of first having to invest in the underlying network infrastructure. These trends have restructured the industry value chain and shifted profit flows.

Recent new entrants, known as Mobile Virtual Network Operators (MVNOs), have taken a comparatively radical approach to the traditional industry value chain. Rarely do they own network infrastructure; instead they depend for mobile access on commercial agreements with incumbent Mobile Network Operators (MNOs). Usually, MVNOs enter the market with a primary offering comprising basic voice and data (SMS) services, and they operate in spare capacity on an established network. The process is technically straightforward, and the economics hinge on international roaming arrangements.

To adapt to the industry transformation, in which products and services are increasingly unbundled, MNOs have had to reshape their business models and specialize by focusing on their strengths, which can sometimes limit them to certain segments of the value chain. Some MNOs started to provide wholesale services to new entrants, rather than competing at a retail level, especially in price-sensitive segments.³⁰ Standardization has played a part by greatly reducing the complexity of operations and enabling streamlined processes, but MNOs still need to recoup their infrastructure and license expenditures, and can do so by selling off a piece of their mobile spectrum.

The value chain may be completely different for different segments: in price-sensitive customer segments, MNOs will provide wholesale capacity and network infrastructure, while MVNOs buy capacity and sell services to the retail consumer. However, there are still customers that are better served by a “full-service” model, as traditional MNOs are able to guarantee a wide range of services. Telecoms, like Energy, is therefore seeing a polarization of production and distribution.

If we extrapolate the concept to payments, we could ultimately see a similarly radical transformation, in which many PSPs may also specialize as payments wholesalers or retailers.

²⁸ Based on Capgemini Telecommunication Sector expertise, and papers from Business Strategy Review.

²⁹ For example, Global System for Mobile communications (GSM), Universal Mobile Telecommunications System (UMTS) and Long-Term Evolution (LTE).

³⁰ For example, Sprint Nextel Corporation providing network for Virgin Mobile USA, or T-Mobile providing the same services to Virgin Mobile UK.

Payments Evolution Could Result in a Paradigm Shift over the Mid-to-Long Term

Regulation and the drive toward standardization and commoditization, as well as innovation and new technologies, are clearly propelling fundamental transformation in the payments landscape.

To date, banks have typically adopted an integrated “produce-to-deliver” model, covering the entire payments’ value chain (illustrated in Figure 3.1)—from developing propositions to producing payments, managing client relationships and offering other services to their clients (though most use partners such as ACHs for clearing and settlement). Banks consequently have crafted and implemented their processes, platforms and applications to align with that model.

If payments were to experience the same kind of transformation seen in industries such as Energy and Telecoms, this “produce-to-deliver” model could be seen as sub-optimal for most players in the mid-to-long term, because it could be too costly and too difficult to adapt. These intrinsic challenges could make it difficult for many banks to develop the revenue-focused and cost-focused strategies they need to thrive—strategies that involve pursuing additional sources of business and revenues and looking for volumes and scale to reduce costs.

Currently, the payments market is arguably still in the “Evolution Phase” (see Figure 3.2) in which the industry—and existing business and delivery models—are starting to feel the pressure of exogenous and endogenous forces. For banks, this means competitive pressure is rising as new entrants emerge, facilitated by the liberalization in the sector and by technological developments.

In the near term (the next three to four years), the effects of forces such as regulation and standardization/commoditization seem likely to continue to push the payments business toward the “Transformation Phase” in which the need to review models and strategies becomes more urgent. As a result, PSPs will likely be required to:

- Further streamline their processes;
- Improve their sourcing strategies and consider new business partnerships.

Ultimately, in seven to twelve years, as the drivers of change exert continued pressure, the payments industry could potentially enter a “Specialization Phase,” in which business and delivery models become more segmented and specialized in specific segments of the value chain.

This would be close to the path of evolution taken by other network industries such as Energy and Telecoms—one in which polarization also occurs in the value chain, tending to drive most market players to one end or the other (production or distribution), depending on their characteristics, capabilities and strategies.

Within a decade, a real paradigm shift in payments could potentially see banks moving from an integrated “produce-to-deliver” model to a more industrial “produce-or-deliver” model, causing substantial disaggregation and restructuring in elements of the industry value chain, as illustrated in Figure 3.3.

If the payments value chain restructures in this way, most PSPs will essentially need to select from one of two roles, since very few will have the scale, capabilities and strategic ambition to pursue both.

Traditional segments, as well as potentially new segments, might be managed by one or more specialists, which would have to interact in order to provide VAS to the final client. The two roles that may potentially emerge in the mid-to-long term are Wholesale Payments Providers (WPPs) and Retail Payment Services Providers (RPSPs).

WHOLESALE PAYMENTS PROVIDERS (WPPs)

Upstream Specialists, concentrating on operations processing, clearing and settlement, and potentially some parts of basic payments instruction, WPPs would need to seek volumes and scale and concentrate on cost-focused sourcing strategies and operational excellence. They would provide low-cost basic payments to the Downstream Specialists.

Industry concentration is inevitable in this paradigm, with the focus on only a few large global or regional banks (and ACHs) that are able to produce basic payments services at a much lower price than smaller local/regional banks—and able to make the requisite heavy investment in payment infrastructures (and/or in Payment Hubs) to be competitive. Still, that competitive advantage would enable WPPs to provide outsourcing services to smaller banks and to other PSPs. This is attractive as it achieves and maintains adequate scale to depreciate their investments. However, this situation might be seen as having implications for concentration risk and systemic risk, which would need to be managed appropriately.

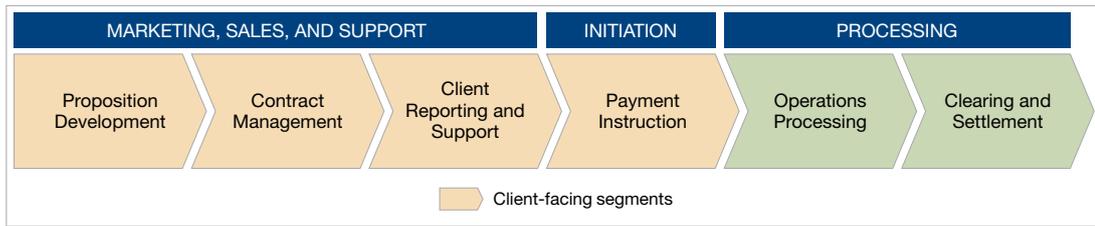
RETAIL PAYMENT SERVICES PROVIDERS (RPSPs)

Downstream Specialists, focusing on one or a few of the client-facing segments of the value chain, RPSPs would most likely be banks (though they could also be non-banks) partnering with vendors and industry specialists to increase the quality and quantity of their services to end-clients.

RPSPs would buy basic payments from WPPs, bundling them with additional services to provide sophisticated VAS. They would capture value by leveraging their relationships (and their attitude toward building relationships) with customers, as well as their industry know-how. Since this role is custom by definition, it is unlikely to result in industry concentration.

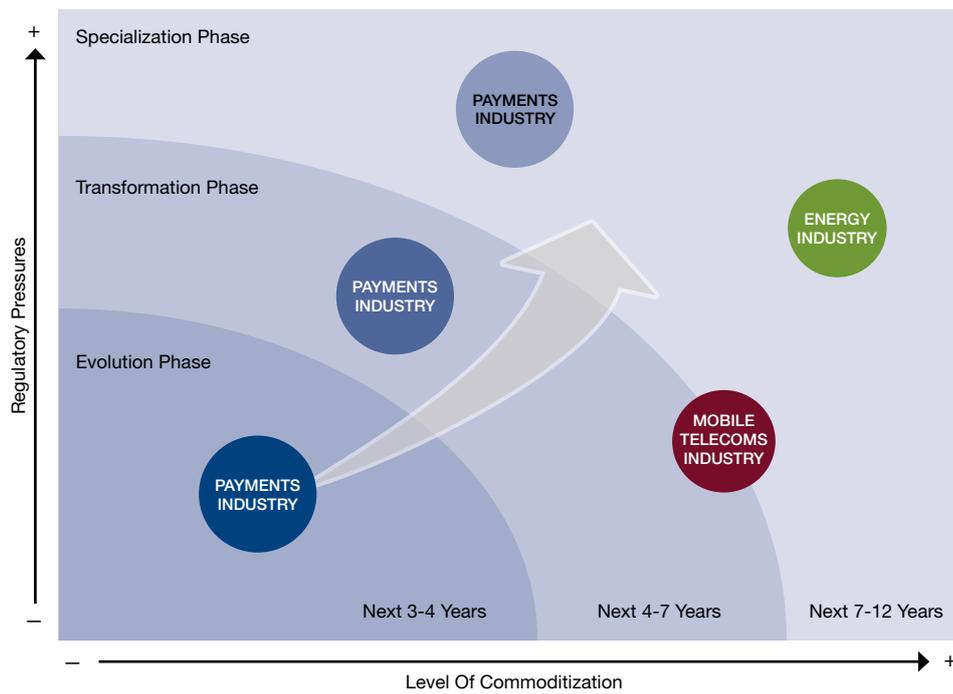
Critically, even in the quite radical value-chain evolution and restructuring described, there would be value in payments at both ends of the payments value chain (Upstream and Downstream).

Figure 3.1 Traditional Integrated “Produce-to-Deliver” Payments Value Chain



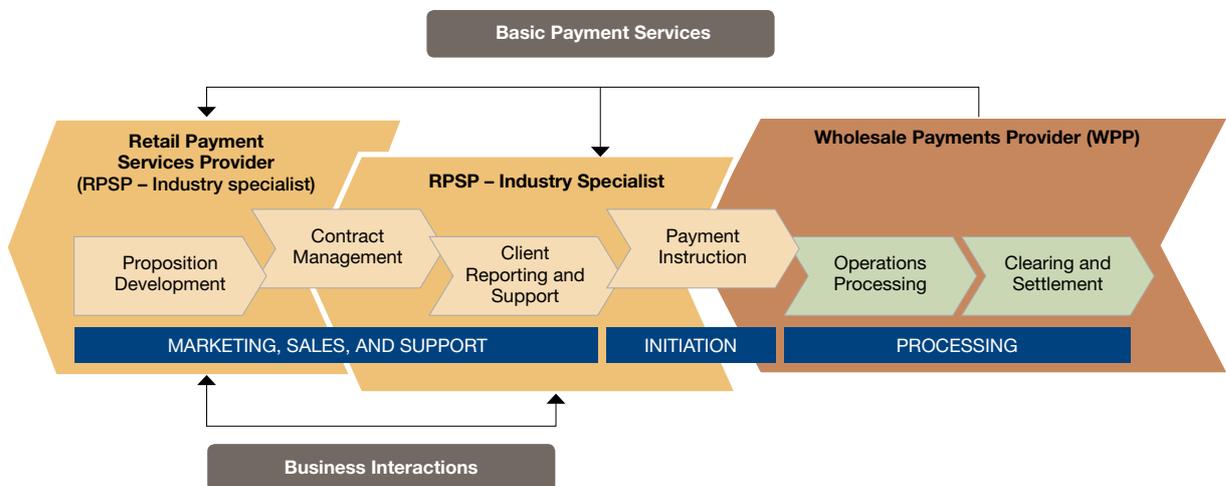
Source: World Payments Report 2010; Capgemini analysis, 2011

Figure 3.2 Payments: From Evolution to Specialization



Source: Capgemini analysis, 2011

Figure 3.3 Disaggregating and Restructuring the Payments Value Chain



Source: Capgemini analysis, 2011

Being Proactive and Innovative in the Near-Term

It obviously takes time to move from the Evolution Phase to the Specialization Phase (shown in Figure 3.2) and the consequent value-chain transformation (Figure 3.3) will likely be a gradual process. In the meantime, banks need to determine which role they want or are able to play in the longer-term and to prepare for potentially radical and systemic market shifts.

The payments market has already had to evolve from its one-dimensional roots around the settlement process (D1) to the more bilateral dimension in which banks interact directly or through third parties with consumers and businesses (D2). Emerging now is the next dimension (D3), reflecting today's more dynamic payment flows, changing payment preferences, new technologies, competitive pressures and the interconnectedness of the global economy itself.³¹

This more dynamic payments universe is marked also by the shifting mix of payment instruments over the last decade, as shown in Section 1, and the emergence of non-bank competition that is already evident in payments trends and innovations.

The behavior of different market players shifts as the payments space evolves and Figure 3.4 shows how specialists in Volume and Value fit into the payments landscape as it shifts through the different dimensions.

In the “Volume Game” (x-axis), players looking for economies of scale and operational excellence can develop sourcing strategies and partnerships to increase global volumes and efficient Payments Hub platforms.

If the value chain does indeed disaggregate (in the way depicted in Figure 3.3), these players would be the WPPs—most likely the players of the inter-banking space (ACHs, card schemes)—plus some global banks/PSPs big enough to produce basic payments at low cost and having the ability to differentiate by providing VAS in specific niches or segments of business.

In the “Value Game” (y-axis), traditional banking players are often followers, reacting to more aggressive and technologically evolved non-bank new entrants. (Notably, some such as Google and Amazon, are already challengers in telecoms, providing “over-the-top” services such as Internet TV).

In the disaggregated value chain, RPSPs would be prime Value Game players, mainly regional and/or local banks, unable (or unwilling) to reach the volumes and scale needed to be Volume Game players.

For many traditional “produce-to-deliver” players, it could be a challenge to deliver in the future paradigm described, because existing infrastructure and applications tend to be segmented and siloed. Therefore they may need to:

- Devise strategies for future flexibility.
- Analyze the different ways and the implications of decoupling payments from core banking systems.
- Consider whether and how to split payments production from payments distribution.

As banks and PSPs position themselves for the long-term, they will need to devise a clear strategy and business vision, and the ability to manage potentially complex transformation programs, in order to succeed. This will be especially important as payments evolve from the Evolution Phase to the Specialization Phase.

Non-bank PSPs (in particular the OTT players, such as Google, Amazon, Apple, Facebook) could increase their focus on retail business, interacting with the WPPs and broadening their offering—thus increasing competition. In particular, mobile telecoms operators might easily position themselves progressively more in the P2P space.

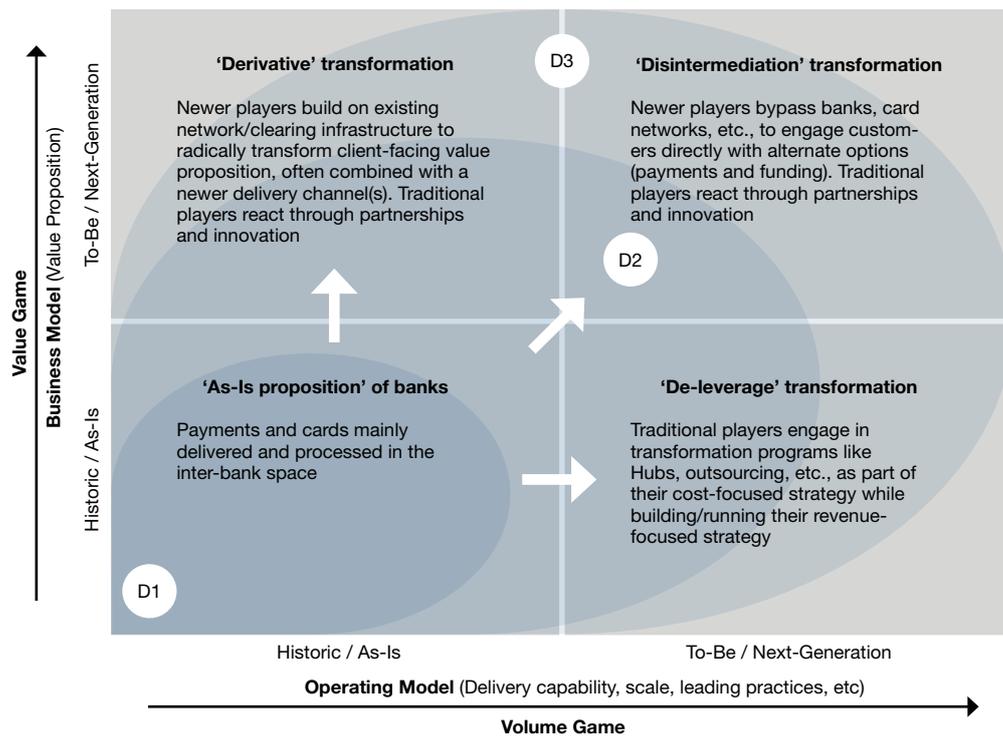
INNOVATION REMAINS KEY TO SUSTAINED SUCCESS

Innovation will continue to be key to the way banks and other PSPs survive and succeed in delivering and creating value—both in the near-term and in the mid-to-long term and mainly in the D3 dimension of payments (see Figure 3.4). Many players will need to stretch beyond their comfort zones when positioning for longer-term success, even though shorter-term opportunities may lie firmly in their grasp.

In the near-term, banks will need to consider investing in innovation and in emerging technologies so they can compete, or partner with, more agile non-bank PSPs and with players from adjacent industries, including Retail, Distribution and Telecoms.

³¹ See WPR 2010 for a detailed description of the three “D” dimensions of the Payments Universe.

Figure 3.4 The Expanding Payments Universe



Source: Capgemini analysis, 2011

In this sense, Mobile Payments will be an important tool for many banks if they hope to be competitive—and address and develop some of the more promising business segments (see Spotlight on Mobile Payments on p52).

CONCLUSION

The convergence of specialization and commoditization and regulatory forces is becoming evident in payments. Indeed, cards offer a clear example of these forces at work. As shown in Section 1, cards are becoming more ubiquitous—and are now used for about 40% of all non-cash payments globally and more in North America (59%) and Mature Asia-Pacific (64%). However, the average value of each card transaction is declining as cards become more mainstream, especially for retail transactions. In the process, cards are becoming more of a commodity, making it hard for one card to differentiate itself from another. Cards are also under pressure from regulatory initiatives, as shown in Section 2.

Learning from the experience and evolution of other network industries, such as Energy and Telecoms, it could be argued the payments industry could undergo a quite radical transformation in the mid-to-long term.

In the near-term, banks and PSPs need to start preparing for the potential long-term paradigm shift by deciding which role(s) they will be able (or willing) to play in that context; and then start defining specific strategies and plans to adapt the way they produce and deliver payments accordingly.

As the payments industry moves from the Evolution Phase to the Specialization Phase, and the payments universe develops in the more volatile D3 dimension, innovation will continue be vital for banks and non-bank PSPs to compete and differentiate their propositions. Mobile payments are perhaps the most significant tool for development and innovation in the D3 dimension. There is obviously no one-size-fits-all approach to mobile payments strategy, or to any other innovation path, but as banks seek to bolster revenues and margins in the near-term, they will certainly need to consider longer-term strategies and plans too.

Whatever their chosen path, banks will need to consider existing infrastructure, user preferences, and their own capabilities and aspirations in developing an integrated plan and business case that can realize the true value of payments as the universe evolves, perhaps quite radically, over the next five-to-ten years.

Mobile Payments

As noted in Section 1, the volume of mobile payments is expected to grow at almost a 50% rate in the next three years. The largest banks, especially those with a significant presence in the cards businesses and schemes, and mobile operators are investing in these new technologies, sometimes in partnership with producers of cell phones and providers of smartphone operating systems. It is uncertain at this point which models will be successful and how revenues will be shared.

Figure 3.5 maps the mobile payments market into four quadrants to show today's achievements and to define the 'value spaces' that define tomorrow's opportunities, as well as incorporating the potential barriers to mobile-payments adoption.

Each **value space** hinges on a different proposition:

a. Pay on mobile: This includes initiation of payments, such as paying through contactless NFC. Volume growth is constrained in this space by handset/acceptance concerns.

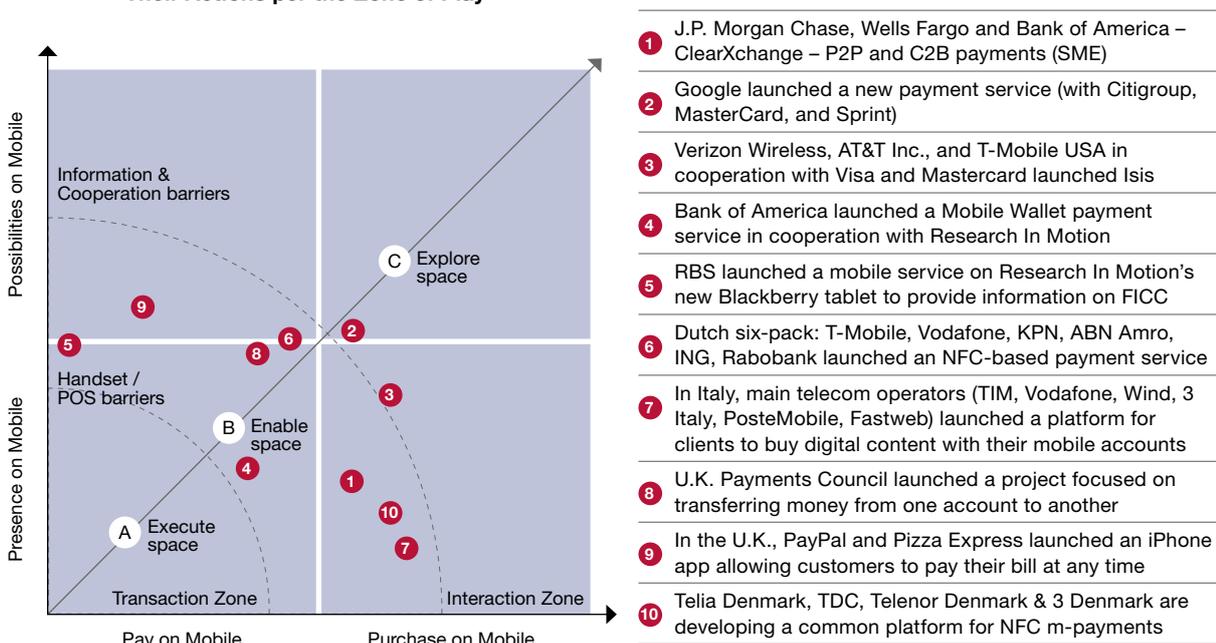
b. Purchase on Mobile: This assumes 'mobile commerce' evolves, with payers using more sophisticated actions such as 'search' and 'share' to fulfill the purchase loop. (Social media also offers unique possibilities in this space).

c. Presence on mobile: This space has only the basic building blocks of enabling technologies that kick-start the adoption of mobile payments. These include short-message-service (SMS, text messaging) enablement, applications, NFC chip/sticker, etc.

d. Possibilities on Mobile: This space blends elements from the demand and supply sides to offer enhanced customer experience:

- **Demand side:** Builds on possibilities from 'knowing the customer'—for example leveraging social, CRM-based insights and/or location-based services to generate and present dynamic offers to customers.
- **Supply side:** Builds on the ability of players to co operate—perhaps offering management (e.g., co-branding arrangements), revenue-sharing, etc

Figure 3.5 Mobile Payments Is a Multi-Layered Solution Requiring Players to Calibrate Their Actions per the Zone of Play



Source: Capgemini analysis, 2011

BARRIERS TO ADOPTION

Barriers to adoption exist alongside the potential value of mobile payments. A critical barrier is the compatibility of handsets and POS terminals and fears that not all stakeholders will fully cooperate. (Both of these barriers are mapped on Figure 3.5). These obstacles may make the mobile business case a ‘tough sell’—especially in the shorter-term and for any player that views mobile primarily as just another delivery channel and cannot envisage its potential for cross-selling, location-based services, etc. The extent of these obstacles differs by market, depending on infrastructure, regulation, user preferences, etc., so business cases will need to be evaluated accordingly.

DRIVING VALUE IN MOBILE PAYMENTS

One way for banks to create value from mobile payments is to drive an actionable agenda across the four quadrants (and two barriers) of Figure 3.5—delivering a mobile payments program that fits in one of three spaces: Execute, Enable, Explore.

A. Execute (Mobile Payments)

In this space, players need to provide, at a minimum, the ability for customers to make mobile payments. The increased availability of technologies like NFC-enabled phones, contactless POS, mobile phone POS will increase the opportunity. In some markets, transit ticketing and top-up, etc. are already possible in this space due to the homogeneity of infrastructure (e.g., in Hong Kong and Kenya).

B. Enable (the Project Frameworks)

In this space, players look to leverage initial investments and explore opportunities to provide enhanced services and circumvent barriers to adoption. These could take the form of ‘pilots’ for specific offerings targeting the customer base of a given bank, such as Bank of America and RIM piloting microSDs as a bridge to NFC to overcome handset barriers. Along the same lines, RBS has launched a mobile service on Research In Motion’s (RIM) new Blackberry tablet to provide information on fixed income, currencies and commodities.

Similarly, Facebook Deals and Google Offers stimulate a closer relationship with local dealers while maintaining ‘presence on mobile’. Some revenue streams that could be explored within the cooperation barriers are:

- Customer fees for traditional services such as registration, money transfer or withdrawal, and bill payment.
- Customer fees for new services, such as application load fees, secure identification, top-up and transit ticketing.

In addition, there are several initiatives that originate solely from mobile telecommunication operators. For example, Telia Denmark, TDC, Telenor Denmark, and 3 Denmark have formed a joint company to develop their mobile wallet platform. As a response, Danish banks are developing mobile payments using text messaging. BankSMS will launch later this year, enabling users to initiate purchases of things like train tickets by sending a text message with a product code. Another example is in Italy, where main telecom operators (TIM, Vodafone, Wind, 3 Italy, PosteMobile, Fastweb) launched MPay, an open platform for clients to buy digital content with their mobile account credit.

C. Explore (the Opportunities)

In this space, players iterate their propositions, though not in any pre-defined way. The focus may be on technology or revenue-sharing. ‘Possibilities’ could combine with commerce to transform the landscape (i.e., in the emerging, interconnected D3 dimension of the payments universe).

Adjunct players like Google, Apple and non-bank players like PayPal are at the forefront of the possibilities, and some players will need to engage and brainstorm with like-minded partners to succeed. In particular, Google is offering an NFC sticker in partnership with VeriFone, MasterCard, Citi, Sprint, and First Data, that can be connected to a credit card and communicate with a virtual wallet app (Google Wallet) through cloud computing. The company is also working to equip leading merchants with NFC-enabled terminals. Taken together, these systems aim to combine payments and merchant discounts at the POS, using the smartphone as an evolved “wallet of the future”.

Revenue streams that could be targeted include:

- Mobile marketing, couponing and advertising, such as mobile coupons at fast food chains (e.g., McDonalds, Qdoba Mexican Grill, Arby’s, Dairy Queen and Dunkin’ Donuts in the U.S. and retailer Tape à l’oeil in France).
- Co-branding arrangements, analogous to today’s co-branded credit cards, generating revenue from bonuses and incentives.
- Customer fees for new services, such as home or building access or location-based services (e.g., tracking of lost devices).



The Way Forward

THE WAY FORWARD

When payments volumes initially showed resilience during the global financial crisis, it was unclear if the trend would last. This report finds the payments market is not only healthy and well, its growth is recovering more rapidly and comprehensively than many dared to hope. But for banks and other PSPs, the future is not without challenges.

Regulatory pressure has increased since the crisis and, together with the drive toward standardization and commoditization, it is propelling a fundamental transformation in the payments landscape in the mid-to-longer term.

It is not yet certain what the payments market will look like in ten years time, but it is clear that it will be different from today. We have postulated in this Report that banks could eventually react to the combination of endogenous and exogenous pressures in a similar way as participants in industries such as Energy and Telecoms have done—by enhancing the level of specialization to counter the increased commoditization of basic payment instruments.

This scenario could potentially result in a radical reorganization of the payments value chain and potentially see banks and other PSPs shifting to either end of the newly disaggregated value chain so as to specialize in the sphere where they can best demonstrate sustainable value.

A move to greater specialization, which also implies greater flexibility, could additionally mean that PSPs (banks in particular) may consider moving away in the mid-to-long term from today's integrated "produce-to-deliver" model in favor of a more efficient and agile "produce-or-deliver" model. This shift would better enable PSPs to address and manage the different segments of the payments value chain and ensure the requisite level of specialization.

While the end-game is not certain, it is beyond doubt that the evolution of the payments landscape is accelerating. As banks and PSPs consider this reality, they need to find ways to thrive in the payments market in the nearer-term—while positioning themselves for the risks and opportunities created by the industry's transformation in the longer-term.

Banks / PSPs should select their future path based on their capabilities and ambitions, as well as the competitive environment, but the key will be finding those business activities in which true potential exists—and will continue to grow as the operating environment transforms.

To tap into that potential, PSPs will need to be innovative—incorporating or even developing new technologies and approaches. The most agile players will use that innovation to maximize nearer-term opportunities while also positioning themselves (alone or in partnerships) for long-term success.

Methodology

NON-CASH PAYMENTS

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

- North America: the U.S. and Canada.
- Europe:
 - The thirteen countries that were members of the Eurozone in 2007: Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, Netherlands, Portugal, Slovenia and Spain. (Cyprus and Malta joined in 2008, Slovakia in 2009, and Estonia in 2011.)
 - Four non-Eurozone countries: the U.K., Denmark, Sweden and Poland.
- Mature Asia-Pacific: Australia, Japan, Singapore, Hong Kong and South Korea;
- BRIC: Brazil, Russia, India, and China;
- Latin America: excluding Brazil;
- Central Europe, Middle-East, Africa (CEMEA): Ukraine, Turkey, South Africa, Saudi Arabia and Africa.

Figures for the U.S., Canada, Russia, China, South Africa, Hong Kong, Japan and Singapore were taken from the latest Bank for International Settlements payment statistics (Red Book, March 2011). The source of figures for the Eurozone is the ECB's payment statistics (ECB Statistical Data Warehouse, 2010). For the remaining countries, figures were taken from central bank publications and websites. Macroeconomic indicators (GDP and population) were collected from the World Bank and International Monetary Fund (IMF).

Total non-cash circulation 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 ECB, along with changes in reporting methodology in certain countries (Germany and France), data from previous years may diverge from data initially reported in the WPR 2010. Wherever data was unavailable or substantially different, data was estimated on a linear basis. Also note that in 2007, Germany changed its methodology for collecting certain payments data, causing a break in the time series, so we took the growth rates for 2001 and 2008, and averaged out data for the intervening years to make data directly comparable year-on-year. These German numbers have been used in all our analysis. In 2004, France also changed its methodology for collecting credit transfer data, so we have restated the data from 2001 to 2004 using the same growth rate as previously published, but going backward from the 2005 figure.

Figures for the BRIC countries have been largely restated due to the fact that, for the first time, the BIS Red Book has published data for these countries. It has thus become evident that the data initially used for China, for example, included more than 10 billion ATM transactions. As these transactions are not considered in the WPR analysis, the new dataset is taken entirely from the BIS Red Book and restated backward so as to demonstrate the trend excluding ATM transactions.

U.S. data from the BIS Red Book does not include prepaid cards data, which is included in data from the central bank (2010 Federal Reserve Payments Study). The Fed reported 6 billion prepaid card transactions for 2009.

Due to a lack of reliable historical data trends, data for some countries has been estimated and then grouped under the appropriate regional heading: other Asian countries, other Latin America countries, or other CEMEA countries.

For worldwide macro descriptive graphs (number of transactions per region), seven regions were defined: Europe without Russia, North America, Japan-Australia-South Korea-Singapore, BRIC (Brazil, Russia, India, China), Latin America without Brazil, Rest of Asia, and CEMEA, grouped by geographic, economic, and non-cash payment-market maturity criteria.

The source for the Workers' Remittances Market Evolution is the World Bank Migration and Remittances Factbook 2011 and for the World Exports Evolution, the World Trade Organization Secretariat. The values used in remittances analysis are inflows (credit) of the workers' remittances, compensation of employees, and migrant transfers.

E-PAYMENTS AND M-PAYMENTS

Size estimates for the overall m-payments market are derived from various industry sources, including Juniper Research, IE market research, EDC Advanced Payments Model, and Generator Research; for alternative payments and e-commerce, the size of the market is derived from various industry sources, including Celent, Datamonitor, EDC Advanced Payments Model, and Packaged Facts.

Average transaction sizes for m-payments and e-payments were estimated using sources such as Vodafone M-PESA, MasterCard trial in Canada and IE Market Research, along with the following assumptions:

- Average transaction size for m-payments has been estimated according to the stage of development of the country (€20 for emerging markets, driven by m-remittances, and €10 for developed markets, driven by convenience proximity transactions).
- Average transaction size for e-payments and alternative payments was estimated to be €45.95 from PayPal numbers using total payment value and number of transactions.

CASH SPOTLIGHT

The analysis of cash-in-circulation versus non-cash transactions was conducted on all Eurozone countries to give the widest possible view. Notes of €200 and €500 were excluded from the study, as these large-currency notes are largely used for hoarding rather than for payments. The same approach was used in the U.S. analysis, where \$100 notes were excluded. Cash figures were provided by the ECB, the Fed and National Central Banks.

FRAUD SPOTLIGHT

The analysis on global card fraud was based on data from the Nilson Report of June 2011 and the 2011 AFP Payments Fraud and Control Survey. The analysis of fraud losses and EMV compliance rates was based primarily on data from the European ATM Security Team (EAST)'s report: "European ATM Crime Report 2010".

Glossary

ACH

Automated clearing house

AML / ATF

Anti-Money Laundering / Anti-Terrorist Financing

ATM

Automated teller machine

B2B

Business-to-business

B2C

Business-to-consumer

BAFT-IFSA

Bankers' Association for Finance and Trade-International Financial Services Association

BRIC

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

CAGR

Compound annual growth rate

CEMEA

Central Europe, Middle East, Africa

CHAPS

Clearing House Automated Payments System

CIT

Cash in Transit
(secure transport agents)

CNP

Card not present

CT

Credit transfer

CUP

China UnionPay

DD

Direct Debit

EBT

Electronic Benefit Transfers

EC

European Commission

ECB

European Central Bank

ECB DWH

European Central Bank's Statistical Data Warehouse (DWH), the official ECB publication covering the main payment and securities settlement systems in EU Member States

EDI

Electronic Data Interchange

EEA

European Economic Area

Efma

European Financial Management & Marketing Association

eGovernment

The use of Information and Communication Technology (ICT) by governments to inform and render services to citizens and businesses

e-Invoicing

The transmission and storage of invoices, without the delivery of paper documents, by electronic means

e-Mandate

The process of issuing an e-Mandate that will allow debtors and creditors to exchange mandates in a fully electronic way

EMV standard

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

e-payments

Online payments for e-commerce transactions

EPC

European Payments Council

e-Procurement

Use of electronic communications and transaction processing by government institutions and other public sector organizations when buying supplies and services or tendering public works

eSEPA

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

EU

European Union

Eurozone

The Eurozone comprises the Member States of the EU that have adopted the euro as their national currency. Eurozone data in the first chapter of this Report cover the thirteen 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, and Estonia have also joined, bringing the number of Eurozone members to 17 as of 2011

FATF

Financial Action Task Force, an inter-governmental body whose objective is the development and promotion of policies to combat money laundering and terrorist financing

FI

Financial institution

FICC

Fixed Income, Currencies, and Commodities

FPS

Faster Payment Service

FSA

Financial Services Authority (U.K.)

FSB Financial Stability Board	Mandate In payments, the “mandate” is the authorisation required	Red Book An official publication of the Bank for International Settlements (BIS)
GDP Gross Domestic Product	MNO Mobile Network Operator	RPSP Retail Payment Services Provider
GSM Global System for Mobile Communication	MIF Multilateral Interchange Fee	RTGS Real Time Gross Settlement
IMTS Informal Money Transfer Services	MTO Money Transfer Operators	SCF Supply Chain Finance
Interchange fee The fee paid by the acquirer to the issuer mainly to reimburse for payment guarantees, fraud management and issuer processing costs	MVNO Mobile Virtual Network Operator	SCT SEPA Credit Transfer
IPFA International Payments Framework Association	NFC Near-field communications (short-range wireless technology) used for contactless payments	SDD SEPA Direct Debit
ISO 20022 Abbreviated term referring to the ISO message scheme used by SEPA instruments	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	SEPA The Single Euro Payments Area is a domain in which the EU 31 is standardizing all euro payments and collections so they can be treated as domestic transactions
ITTs Industry Transformation Trends	OA Open Accounts	SMS Short-message service (more commonly known as text messaging)
KPI Key performance indicator	P2P Person-to-person	STP Straight-through processing
KRIIs Key Regulatory And Industry Initiatives	PA Public Administration	SWIFT Society for Worldwide Interbank Financial Telecommunication
KYC Know Your Customer	Payments Hub The “business evolution” of the Payments Factory: it also focuses on people and processes and enables a wide range of sourcing strategies	TF Trade Finance
Legacy payments Term used to describe domestic payment instruments that pre-date SEPA	PI Payment institution	UMTS Universal Mobile Telecommunications System
LOC Letters of Credit	POS Point-of-sale	WPP Wholesale Payments Provider
m-payments Mobile payments, any payment initiated through a mobile device	PSD Payment Services Directive	WTO World Trade Organization
	PSP Payment Service Provider	

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