

The MPD Dialogue Series

Payment Industry Futures: The Global Adoption and Evolution of eWallets

January 11, 2006
The Gramercy Tavern
New York, NY

www.marketplatforms.com



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Agenda

MPD Dialogue Series: Payment Industry Futures
The Global Adoption and Evolution of eWallets
The Gramercy Tavern
January 11, 2006

This MPD Dialogue session features **David S. Evans**, Founder of Market Platform Dynamics, and author of ***Paying with Plastic: The Digital Revolution in Buying and Borrowing***, who will moderate a discussion centered around the global evolution of eWallets, discuss the moves being made by the leading players and what the impact might be on the traditional payment industry landscape.

John BaRoss, Vice President of Business Development for Click&Buy, a very successful European-based challenger to PayPal, and **Andrei Hagiu**, Professor at Harvard Business School, platform-business expert and authority on the mobile payments industry in Japan and China, will share their thoughts and perspectives.

Discussion Topics

The Online Payments Industry

A study in contrasts

- Early industry history: what ignited the market in the late 1990s
- The late 90's-early 2000 industry shakeout: who failed/who succeeded and why
- Strategies to achieve adoption in a complex payment ecosystem
- Opportunities and threats: what is fueling industry expansion and how incumbents and new entrants mitigate industry risk

The Mobile Payments Industry

From ringtones to the register

- The technology behind mobile payments in Asia: Sony's FeliCa Chip
- Mobile payment case study: Japan and DoCoMo
- Strategies to achieve adoption in a complex payment ecosystem
- Perspectives on timeframes for adoption by region

The Industry Implications

Chickens, eggs and new opportunities

- Both sides on board: getting merchants and consumers on board in an environment of multiple and competing technologies
- The Google Wallet announcement: the impact to the existing online and mobile ecosystem



MPD Fact Sheets

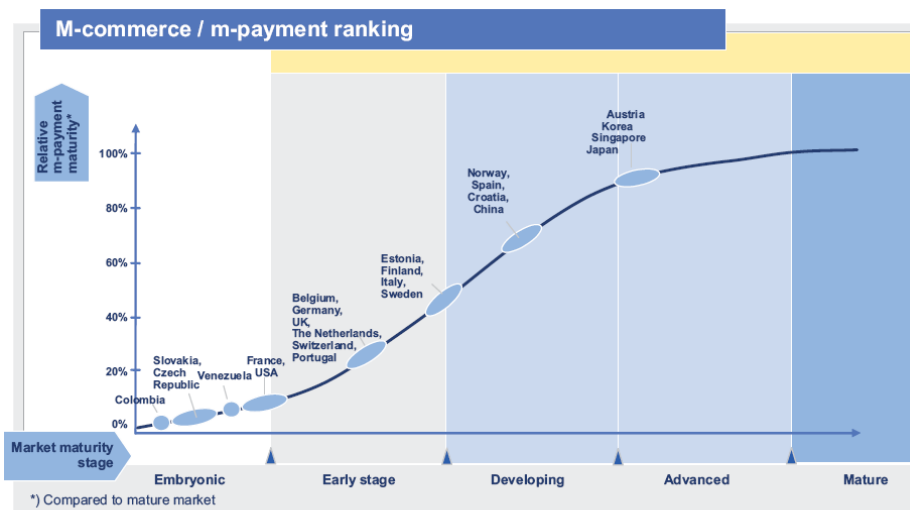


MPD Fact Sheet

Overview of Mobile Payment Solutions

Background

- Mobile payments is defined as paying for goods or services with a mobile electronic device such as a cell phone or a PDA. This payment solution can be used in a variety of payment scenarios.
- A report from Arthur D. Little in December 2005 points out that Japan, Singapore and South Korea in Asia, along with Austria in Europe, are leaders in mobile payments. China, Croatia, Norway and Spain are termed “in development” and all other countries are far behind; the U.S. is considered moving from “embryonic” to “early development.”



Source: Arthur D. Little analysis

Asia

- Japan, Singapore and South Korea lead the world in the adoption of mobile payments, with China now gaining traction as a result of the large number of mobile phones in circulation.

Key Details

Japan

- Working with Sony, NTT DoCoMo has established a simple, device-based mobile payments solution. Sony's FeliCa contactless chips are integrated into mobile phones, enabling payments to be made using a mobile phone in shops that have a FeliCa chip reader.
- More than 7 million Japanese consumers have mobile phones equipped with this contactless payment technology. And more than 2.5 million Japanese merchants can accept such payments. For now, most of these transactions are facilitated by phones registered with NTT DoCoMo.
- Going forward, NTT DoCoMo will begin to collaborate more closely with banks and card companies which will expand Japan's mobile payments market.

Overview of Mobile Payment Solutions: Asia (continued)

South Korea

- In 2003, South Korea became the first country in the world to roll out mobile payments schemes on a national basis. All three of the country's wireless carriers have launched full-scale m-banking services.
- South Korea's emergence as one of the world leaders in the mobile payments arena is due to a number of factors, including technological innovations, high mobile phone penetration rate (68%), government's support to develop common standards, and the willingness of competing carriers, banks and payment companies to work together.
- SK Telecom, the country's largest mobile operator, launched its mobile payments offering, Moneta, in the summer of 2003 at a cost of about \$40 million. It is typical of the mobile schemes that have subsequently emerged in this country: mobile payments are enabled by the use of the handset's smart chip, which is linked to a credit card account. As a result, it functions then as a contactless-style card at the point of sale, using either radio frequency or infrared technology to complete the transaction. Additional password-protected authentication through the carrier's SMS service is required for higher-value transactions.
- A separate initiative, Korea Mobile Payment Services (KMPS), was founded in 2000. It has 250,000 merchant customers in South Korea. The company authorized 326 million transactions in 2004.
- In October 2005, First Data announced that it would buy an 80% stake in Korea Mobile Payment Services.

China

- Although mobile payments initiated there in 2002, it has not gain much ground, due to technology obstacles and interoperability issues. China's main focus related to mobile development is to turn mobile phones into true "electronic purses" allowing consumers to purchase pre-paid credits, pay utility bills and transfer credit to the phones. But today many mobile phones are not equipped to handle such transactions.
- Banks in China remain cautious with respect to the use of mobile phones as payment terminals, partly due to the fear of fraud. Since, for now, the demand for mobile payments is not large (relatively few merchants accept payment cards, not to mention mobile payments), many banks have adopted a wait-and-see attitude.
- Players to watch in China include SmartPay Jieyin, Ruyipay, and Union Mobile Pay (a joint venture between China Mobile and China UnionPay).

Key Stats and Facts

- More than 7 million Japanese consumers have mobile phones equipped with contactless payment technology. They can use these phones to pay for things at more than 2.5 million Japanese merchants. (Source: Market Platform Dynamics)
- China has the world's largest mobile phone market, with more than 377 million mobile phone subscribers. (Source: Xinhua News Agency)



Overview of Mobile Payment Solutions: Asia (continued)

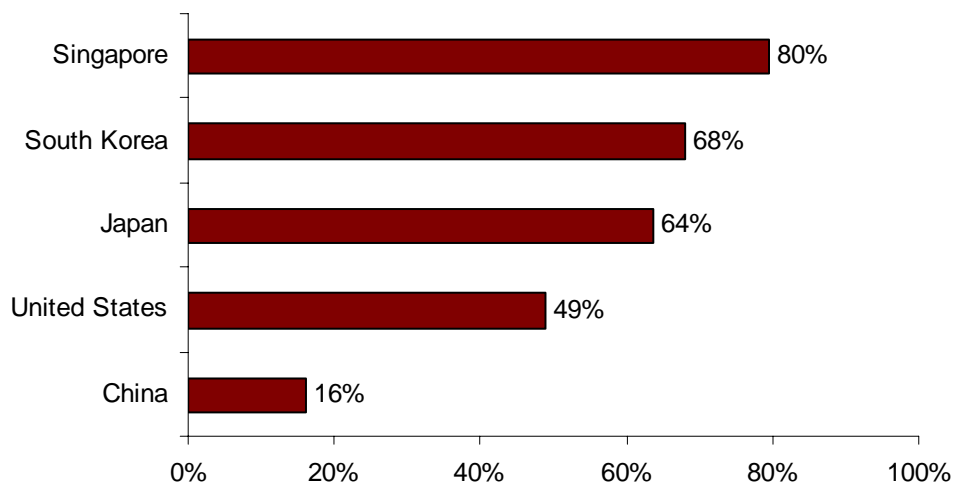
Key Stats and Facts (continued)

- The number of people using mobile phone-based payment services in China was expected to reach 18.7 million by the end of year 2005, growing at a rate of .75% year-on-year. The penetration rate of mobile phone-based payment services will reach 4.74% at the end of 2005. By the end of 2008, more than 97.5 million people in China are expected to be using mobile phone-based payment services. (Source: Analysys)
- In December 2003, South Koreans had used mobile banking services (account inquiries or banking-related transfers or transactions) 2.56 million times, more than double the 1.1 million recorded a year earlier. By the second quarter of 2004, the value of m-banking transactions had reached KWR2.2 trillion (\$2 billion) - a rise of over 58 percent from the previous quarter. For 2005, the total number of transactions was expected to exceed 4.5 million a month. (Source: Tower Group)

Analyst Reactions

- Zhou Yi, Analysys International (China): *"The current mobile payments market [in China] is dominated by operators and is still the introduction phase, when users are being cultivated. ... The industrial value chain still hasn't been established, players in the value chain should enhance their cooperation and coordination to build a healthy and complete cooperation system and platforms that drive development of mobile payments applications."*
- Bruce Cundiff, Javelin Strategy and Research: *(Talking about First Data buying stake in Korean Mobile payments Services) "It certainly makes sense [that First Data] would make a play and they would have sort of a beachhead [in South Korea]. [First Data's strategy in Korea] must encompass the mobile aspect, because it's so ingrained in the Korean consumer mind-set."*

Mobile Phone Penetration Rates



Source: "Pocket World in Figures", *The Economist*, 2005 Edition.

Overview of Mobile Payment Solutions (continued)

Europe

- So far, the mobile payments market in Europe is still quite fragmented. And most payment solutions are targeted at specific countries and driven by local requirements.
- Simpay, a major joint venture to provide a pan-European mobile payments service, was dissolved in June 2005, just weeks before its planned launch date. The reason for its collapse was that participants were unable to agree on what types of mobile payments Simpay would offer.
- Wireless carriers and other players are now pursuing new initiatives, now more on individual basis.

Key Details

- Simpay was established in 2003 by four major European wireless operators – Orange, Telefonica Moviles, T-Mobile and Vodafone. Two additional carriers, Amena and Proximus, joined the project in early 2005.
- Simpay's initial plan was to offer its services in 20 countries by 2004, but the plan was delayed many times along the way. In early 2005, the group announced that the service would be launched in April with a reduced scope of operations (only operating in the Spanish market).
- However, disagreements among members continued related to payment types. T-Mobile wanted to embed contactless payment chips within cell phone casings, while other companies, such as Vodafone, wanted subscribers to use their phones to purchase digital content such as ringtones in essentially an online fashion. In June 2005, T-Mobile made a decision to proceed with its own existing technology, which brought an end to the joint-venture.
- Though Simpay was promising in reducing the number of contractual relationships needed between operators and merchant third parties, analysts said a standardized billing platform such as that provided by Simpay across different networks could be prohibitively costly for carriers, particularly when compared with established payment systems. This, along with the relatively low activity in the m-commerce space also contributed to Simpay's demise.
- Austria is one of the world's most successful mobile payments markets. There, Mobilkom Austria is the leading provider. By 2005, Mobilkom Austria was offering a range of mobile commerce solutions facilitating payments for public transport, parking, event and lottery ticket services, home delivery shopping services, vending machine and in-store purchases, taxis, and purchases at fuel stations and other retail outlets.
- In Croatia, mobile payments providers are focusing on enlarging the retailer base and upgrading personal banking applications. For example, there, T-Mobile's M-pay allows users to register their credit card accounts and bank accounts with the service, pay most of their utilities bills, TV subscriptions, and landline and mobile telephone bills. Croatia was also one of the first markets worldwide to launch m-parking.
- In the UK, mobile payments are still under development. A mobile payments service provider, Bango, went public in June 2005. Bango provides mobile payments services to all mobile subscribers and managed solutions for content providers. In addition, leading e-commerce portals in the UK have expanded their mobile offerings. eBay (UK) launched "eBay Anywhere" at the end of 2004, offering transaction tracking and bidding from mobile devices.

Overview of Mobile Payment Solutions: Europe (continued)

Key Stats and Facts

- The mobile payments market in the UK offers GBP100-150 million potential annual revenues to mobile telecom operators for processing payment transactions. (Source: Booz Allen Hamilton).
- Currently, over 60% of all UK retail transactions by volume are still paid for in cash, leaving a huge growth potential for cashless payments. (Source: Booz Allen Hamilton).
- In Vienna, Austria, the m-parking system is now used by more than 80,000 of the city's 650,000 registered drivers, and each day 7,500 mobile parking tickets are purchased. (Source: Booz Allen Hamilton).
- It is expected that 50 percent of the total Belgian population will be able to make mobile payments by 2008-2009, possibly even earlier. (Source: Booz Allen Hamilton).
- In Croatia, the m-parking service has been expanded to more than 23 cities across the country and m-parking market share vary from 25 percent of parking turnover in Zadar to 75 percent in Dubrovnik. (Source: Booz Allen Hamilton).

Analyst Reactions

- Joseph Levine, Yankee Group: *"The cost of getting a digital purchase onto the bill [of a wireless carrier] is still fairly high. When you look at the revenue splits there, you have more people who potentially need to get paid."*
- Michelle de Lussanet, Forrester Research: *"With Simpay out of the picture, banks have more breathing room to plan their own entry into the world of mobile payments. ... [Simpay was] doomed from the start. ... Part of the difficulty of Simpay was getting a number of competing wireless carriers to sit down and work together. It simply lost momentum."*
- Nick Jones and Martin Gutberlet, Gartner: *"[The] decision to abandon a Europe-wide Simpay roll-out [was] a short-sighted one. ... This move represents a lost opportunity, but it does not mean the end of European mobile commerce. The losers from this decision will be consumers and merchants who would have benefited from simplicity, consistency and interoperability. The winners will be potential competitors, such as PayPal, payment processors, aggregators and operators' 'on portal' payment systems."*

Implications/Impact

- The failure of Simpay has contributed to the slow expansion of mobile payments in Europe. Carriers and finance companies had hoped to get consumers to use their phones as mobile wallets, conducting contactless payments for subway fares and movie tickets.

Outlook

- European carriers can still go ahead with their own individual offerings based on local needs and business environments, while leveraging Simpay's know-how. But lacking of a common platform will cause interoperability problems in inter-platform and international transactions, limiting the markets for each service provider.

Overview of Mobile Payment Solutions (continued)

United States

- The U.S. lags behind Europe and Asia in terms of mobile payments. There are several barriers, including tougher regulations regarding telecom and finance, lack of consumer interest in cell phone services beyond voice, and the lack of a workable agreement on cost sharing and revenue. In the U.S., the chief supporters are the sponsors of nationally branded bankcards and their issuing members. They are embedding their chips, though, primarily in payment cards or in key fobs (we discuss this in the "Emerging Technologies: Contactless Cards" fact sheet), not cell phones.
- Perhaps the biggest obstacle is the lack of mobile phone penetration overall. Although mobile phone ownership and usage is high in some demographic groups, e.g. Generation Y, overall, the percentage of cell phone penetration is lower in the U.S. than in those countries which lead in mobile payments. There are 48.8 cell phones per 100 people in the U.S., while the number is 68 in South Korea, 63.7 in Japan and 79.6 in Singapore. (Source: "Pocket World in Figures", The Economist, 2005 edition)
- Nonetheless, there is some movement in this area. Motorola has started pilot-testing MasterCard-enabled phones and has recently announced plans for public tests by the second half of 2006.
- Philips, Sony and Nokia co-founded the NFC Forum, an industry association, in 2004. MasterCard, Matsushita, Microsoft, Motorola, Samsung, Visa, American Express, LG, Siemens and Sony Ericsson, among many others have since joined.
- Sprint Nextel and all other major U.S. carriers have at least acknowledged that they are exploring their mobile payment options.
- On the payments side, MobileLime has recently launched its service in the Boston area and has plans to expand nationally. MobileLime's service is based on IVR (Interactive Voice Response) and text messaging. Users of any cell phone dial a toll-free number and enter relevant info to authorize a transaction with a registered merchant. MobileLime has signed up 10,000 users, and the company expects that number to increase dramatically in coming months with national roll-out.
- In November 2005, Discover Financial Services announced that it would test contactless cell-phone payments. Discover intends to make its payments via cell phone "an ATM at the hip" for Discover credit cardholders and Pulse debit network cardholders, says Rick Reese, Discover vice president of enterprise architecture.
- Starting in January 2006, JP Morgan Chase will initiate a six-month test of mobile phone payments and content downloads in Atlanta. In an arena shared by the professional hockey and basketball teams, 300 season ticket holders will be able to use special Nokia cell phones to pay at POS terminals. Billing will be to the subscriber's Cingular account. The participants will be customers of both JP Morgan Chase (Visa credit cards) and Cingular (mobile network).

Mobile Payment Solutions: Source Material

- Cell Phones Move Into POS Payments, *Cards&Payments*, Jan. 1, 2006.
- Mobile payments - Operators: Canada co-operates as the U.S. trails, *Electronic Payments International*, Dec. 12, 2005.
- Arthur D. Little Global M-Payment Update 2005 - M-Payments Making Inroads, Dec. 2005.
- First Data to Buy Stake In Korean Payments Company, *American Banker*, Oct. 21, 2005.
- Mobile payments set to generate GBP100m-GBP150m annual revenue in UK and progress cashless society, *M2 Presswire*, Aug. 1, 2005.
- Mobile payments setback as Simpay closes down, *Electronic Payments International*, Jul. 27, 2005.
- M-commerce effort Simpay collapses, *RCR Wireless News*, Jul. 4, 2005.
- South Korean m-banking comes of age, *Electronic Payments International*, Jan. 25, 2005.
- Cashing In Where Cash Is King --- Chinese Cellphone Providers Develop Mobile-Payment Systems, *The Asian Wall Street Journal*, Jan. 24, 2005.

MPD Fact Sheet

Overview of Online Payment Solutions

Background

- This fact sheet covers online payment platforms, defined as those which provide merchant-independent payment mechanisms with flexible funding options, convenient registrations and uses for individual users and merchants. These platforms allow money to be transferred from one account to another account. Generally, online accounts are tied to specific credit, debit cards or bank transfers. In some instances, money can be transferred into online accounts from debit cards or checking accounts. Mobile payments is defined as paying for goods or services with a mobile electronic device such as a cell phone or a PDA. This payment solution can be used in a variety of payment scenarios.

United States

- The business of online money transfers between individuals and small merchants grew out of the Internet auction phenomenon in late 1990s, which united small sellers and buyers via the Web and created the demand for a quick, reliable way to make payments and transfer merchandise. Due to its convenience, flexibilities, and low cost transactions, online payments have gained popularity, starting first in the U.S. and eventually evolving into a worldwide industry.
- In 2002, there were four major online players, besides PayPal, including Citibank's C2it, Yahoo's PayDirect, and eBay's own BillPoint. By mid-2005, only PayPal remained.
- Today, PayPal is the dominant online payment scheme in the U.S., although Google, JP Morgan, and a few other start-ups are beginning to enter the market. Competition is being spawned by the increasing number of online shopping venues, coupled with the pervasive penetration of broadband which makes on line shopping transactions both feasible and desirable by consumers.
- Consumers in the U.S. spent more than \$18-billion online (excluding online auctions) in November and December, a 25 percent increase from 2004, according to estimates by the research firm comScore Networks. Some reports suggest that these numbers may actually be higher. Data from Nielsen/NetRatings, estimated Web purchases including online auctions totaled more than \$30-billion over that same period, an increase of 30 percent from 2004.

Key Details

- PayPal launched in 1998, and gained critical mass quickly. It did so by offering eBay sellers a real-time payment service which proved far more attractive than the multi-day clearing periods imposed by banks at that time. In addition, its service was offered to sellers at a fraction of the cost of processing credit card transactions. This had the advantage of attracting many sellers to the eBay platform, which in turn brought buyers to the online marketplace in force. PayPal became so dominant on eBay that by 2002 eBay made a decision to acquire PayPal and abandon its own Billpoint service.
- PayPal continues to thrive after its eBay acquisition; today, roughly 70% of its revenues come from transactions on eBay. PayPal however, has been steadily expanding its business outside of online auction payments, and has begun teaming with larger merchants such as Dell.com and iTunes.com to provide PayPal payment options on their websites.

Overview of Online Payment Solutions: United States (continued)

Key Details (continued)

- Yahoo Auctions added PayPal as a payment option to its site in 2004, accelerating the demise of its captive online payment mechanism, PayDirect. A year later, in November 2004, Yahoo and HSBC made a decision to shut down their joint-venture PayDirect by May 15 2005, conceding the market to PayPal.
- There are signs that new players are emerging in the U.S. On April 13, 2005, Google filed papers to form the "Google Payment Corp.," suggesting the online giant was working on a payment solution of sorts. Codenamed "Google Wallet", the speculation at that time was that an online payment capability would allow users to pay for content, products or services they find through by using the Google search engine. Such a payment service could also give Google deeper insights into account-holders' buying habits - an advantage that theoretically could be used to do a better job of delivering relevant ad links that could generate more revenue.
- At the 2006 Consumer Electronics Show, Google announced its Google Video Store service and referenced a Google payment system. Exact details related to this online payment capability are unavailable at the time of this report.
- In March 2005, a JP Morgan executive said the company had plans to build an online payment system similar to PayPal. The effort is just one of several actions Heidi Miller, the new chief executive of the No. 2 U.S. bank's treasury and securities services (T&SS) unit, wants to take to wring profit out of an area often thought of as a sleepy back office unit. Though no updates are available, JP Morgan will need a clear strategy in order to avoid the mistakes made by other banks such as Citibank and HSBC (joint-venture with Yahoo in PayDirect) in this area.
- There are several other smaller players that have declared their intentions to enter the online payment market in the U.S. GreenZap, a San Diego, California-based company says it has ambitious plans to compete with PayPal. Its system is similar to PayPal's, except that it charges a flat fee instead of a percentage of each transaction, and rewards its users for using its services. GreenZap claims that it has grown to over 350,000 users in 229 countries since its launch in June 2005.
- Bill Me Later is a payment solution that allows online shopping without providing credit card info, seems to be gaining traction. According to *BusinessWeek*, some one million consumers have used this alternative, which permits buyers to shop online using only their date of birth and the last four digits of their SSN, at 230 e-commerce sites including Wal-Mart, Priceline, Overstock.com, Expedia's Hotels.com and airlines such as American and Continental. Bill Me Later process includes analyzing the transaction and checking the purchaser's background info; all in less than 4 seconds before approving the transaction. Consumers receive a bill from Bill Me Later which can be paid though check, electronic funds transfer, or other means. Bill Me Later charges merchants a 1.5% fee on transactions. For higher purchase items, Bill Me Later also provides merchants with financing plans.

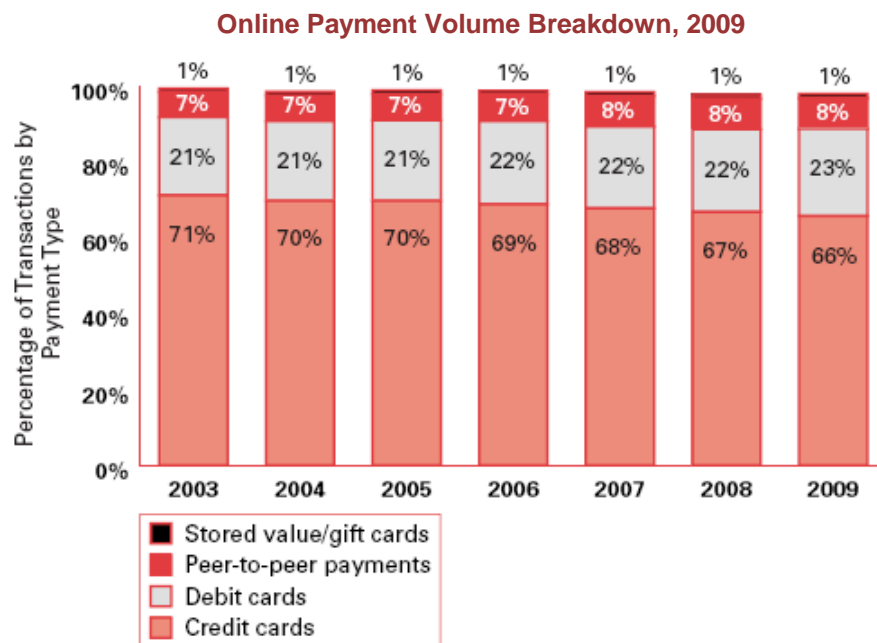
Key Stats and Facts

- As of the third quarter of 2005, PayPal's user accounts grew to 86.6 million accounts, up 53 percent year over year. Active accounts grew to 24.5 million, up 41 percent year over year. Total gross payment volume handled by PayPal grew to \$6.7 billion, up 44 percent year over year. Total number of payments grew to 117.4 million, up 41 percent year over year. (Source: eBay Q3 2005 report)
- Currently, there are more PayPal account owners than American Express cardholders and PayPal is now third behind Visa and MasterCard in global payment use. (Source: Royal Bank of Scotland)

Overview of Online Payment Solutions: United States (continued)

Key Stats and Facts (continued)

- Yahoo Auctions added PayPal as a payment option to its site in 2004, accelerating the demise of its captive online payment mechanism, PayDirect. A year later, in November 2004, Yahoo and HSBC made a decision to shut down their joint-venture PayDirect by May 15 2005, conceding the market to PayPal.
- In 2004, PayPal payments accounted for 9 percent of e-commerce payment service volumes. (Source: eBay)



Source: Jupiter Research, 2005.

Analyst Reactions

- Avivah Litan, Gartner: *(Talking about Google's potential entry:)* "This is probably the biggest threat to PayPal that has come along so far."
- Sucharita Mulpuru, Forrester: *(Talking about Bill Me Later's potentials:)* "It has the potential to open online retail to a whole new segment of customers that wouldn't have shopped otherwise."
- Heath Terry, CSFB: *(Talking about eBay's acquisition of Verisign's online payment gateway business:)* "Given the early stage revolt among retailers against rising credit card processing fees, particularly among online retailers, we believe PayPal is well positioned to take share in this market."

Overview of Online Payment Solutions: United States (continued)

Outlook

- According to Jupiter Research's estimates, traditional payments—credit and debit card transactions—will continue to represent the vast majority (89 percent) of online transaction volume through 2009. While consumer-to-consumer auction payments will remain the primary usage for online payment alternatives, deferred balance and stored value transactions will demonstrate a double-digit compound annual growth rate (CAGR) in both volume and value in the same time period.
- Some overseas online payment systems are also trying to entry the US market. For example, in March 2003 FIRSTGATE introduced FIRSTGATE Click&Buy into the US (For more information, see the Europe part of this fact sheet).

Europe

- There are several online payment providers now in Europe. PayPal leads the online transactions market with local sites across 9 European countries, but Click&Buy, Click2Pay and Paynova, among others, have recently emerged as promising players.
- Niche players have also emerged in Europe as a result of PayPal's business decision to opt out of the online gaming and adult content payment markets. Neteller (UK) and FirePay (UK) are two leading providers in this area.

Key Details

- In early 2004, PayPal was granted the Financial Services Authority (FSA) license in UK which enabled the company to extend that license to other EU countries. Now, PayPal has opened local sites in 9 European countries: UK, Germany, Italy, France, Austria, Spain, Netherlands, Belgium, and Switzerland (all of which but UK were opened from 2004-2005). Among those, UK, Germany and France are the big three eBay markets in Europe and PayPal has naturally followed eBay's steps. PayPal is accepted on over 80% of eBay.co.uk listings. And according to PayPal, it has 10 million user accounts and is the most visited financial services website in the UK.
- Click&Buy is an important online micropayment platform in Europe. Developed by WebPay, Click&Buy has been largely used by online merchants that charge small amounts for content rather than physical products. Click&Buy gives consumers easier access to online digital and paid content as well as services, allows merchants to sell globally online at low costs, and gives consumers the flexibility to pay for online content. Its major clients include Apple iTunes, which uses Click&Buy to distribute its service throughout 14 European countries.
- Over the last few years, WebPay International AG has been building a network of strong partners such as British Telecom plc in the UK, FIRSTGATE Internet AG in Germany, Raiffeisen Bank in Austria, and FIRSTGATE Internet Inc. in the U.S. to form "The Click&Buy Alliance". These partners develop and operate Click&Buy businesses in different regions under their names e.g. BT Click&Buy. The Alliance allows consumers from any Click&Buy system to purchase quality content from a merchant utilizing any Click&Buy system.

Overview of Online Payment Solutions: Europe (continued)

Key Details (continued)

- In 2002, British Telecom (BT) signed a licensing agreement with WebPay, in order to launch BT Click&Buy. In February 2005, BT created a new division called ePayments, which brought together Click&Buy and BT Buynet, BT's card payment processing service. This was done in order to better coordinate these two services. BT's target was to raise Click&Buy to one million subscribers by the end of 2005- a substantial increase for a service that had taken more than two years to reach 300,000 subscribers.
- Click2Pay is another online payment solution provided by Wire Card AG, a leading European supplier of financial supply chain solutions. Click2Pay provides various online funding options which usually include direct debit/ACH, online banking, bank deposit and credit card, all but the credit card is free. Its user base is growing at more than 20% per month and includes merchants and users from all over the world. Click2Pay is supported by a 500 man call centre which is able to communicate in seven languages including Chinese and Japanese.
- Paynova Wallet, a Swedish online payment provider, offers its Paynova Wallet in selected European countries such as Sweden, France and Germany. The service is free if users maintain a minimum balance of \$10 in their account. Users can also choose to fund the account through credit card, Internet bank or bank transfers.

Key Stats and Facts

- As of October 2005, PayPal has 10m accounts in the UK compared to 6.3m in 2004, a 58.7% growth. (Source: The Guardian)
- As of Feb 2005, BT says it handles 5.5% of all UK online transactions, totaling 790 million pounds. Its goal is to grab an 11% share of market by 2007 – estimated by then to be worth about 5 billion pounds. (Source: The Guardian)
- Over five million consumers and 4,000 online merchants are successfully using Click&Buy in fifteen countries worldwide. (Source: Click&Buy)
- The number of Paynova Wallets rose to some 410,000 in the last quarter of 2005. Currently, some 20,000 banks worldwide accept VISA, MasterCard and Eurocard payments through the Paynova Wallet.

Analyst Reactions

- Alexander Linden, Gartner: *(Talking about BT Click & Buy's opportunities) "As online commerce increases, the margins get better for the service providers and there is likely to be more demand for intangible products. With concern over credit card fraud, there is also an attraction to a service that allows payment to be linked to a phone bill."*
- Benjamin Ensor & Elena Giovannini, Forrester: *"Although there are many new payment systems in Europe, few consumers used any new system last year. Many Europeans don't even know that alternative payment systems exist. But low awareness isn't the real problem. Many of today's new payment systems just aren't compelling enough to persuade consumers to change their habits. In most situations, traditional payment methods are good enough. Alternative systems need to address specific consumer needs and partner with banks and large merchants like car-park operators to survive."*

Overview of Online Payment Solutions: Europe (continued)

Implications/Impact

- As PayPal expands into Europe from the US, some online payment platforms originating in Europe are also trying to enter the US market. For example, Click2Pay and Click&Buy both have their US presence though their market shares at the moment are still small.

Outlook

- Going forward, PayPal is expected to continue its leading position in Europe, while Click&Buy and other players try to gain more market share.

China

- 2005 is reported to represent Year One of the age of online payments in China given the growth of ecommerce internet sites and the corresponding growth in online payment options.
- China's online payment market still faces major obstacles to growth including the low number of credit card users, a low level of internet penetration and a personal banking system that is still in its infancy.
- Nonetheless, domestic and foreign players are aggressively building their market positions for long-term market share in the world's most populated country. And, the online payment market in China is already becoming over-crowded. More than 50 companies have entered the market and the competition for business is intense. Important players include PayPal, AliPay, 99Bill and YeePay.

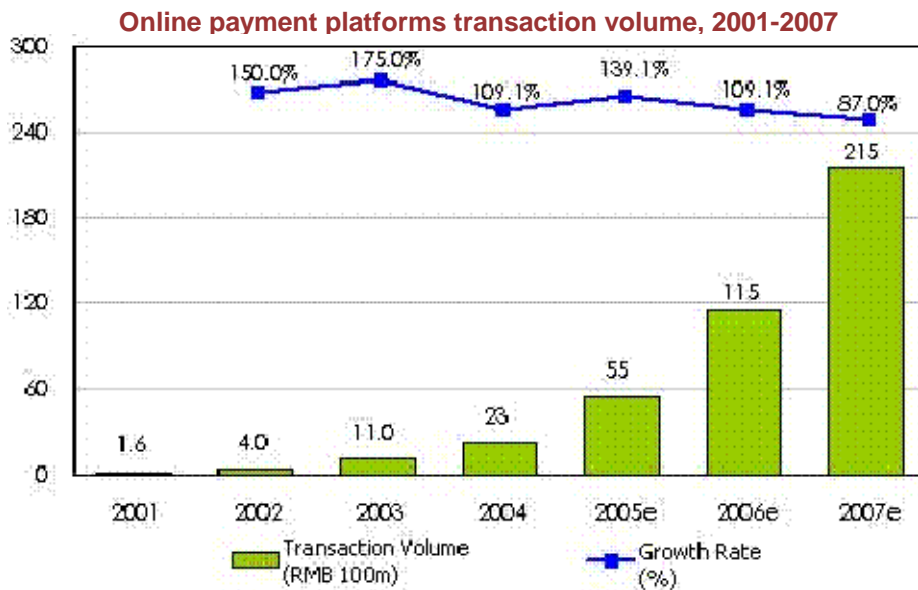
Key Details

- AliPay was launched in 2003 as a subsidiary of Alibaba.com, a leading B2B website in China. It is designed to leverage Alibaba.com and TaoBao.com's (an online auction site similar to eBay) user base. As such it appears to have a huge head start in this market.
- 99 Bill is another player that is now aggressively approaching the market. Its service facilitates payments for digital content, such as movie and music downloads, in addition to physical goods. With an email address and/or a mobile phone number, registered 99Bill users can send and receive money through the web or via mobile phones. The company has teamed with a major online portal, NetEase.com, to sell inexpensive prepaid online payment cards at convenience stores and internet cafes that kids can use to pay for online games on NetEase's website. In addition, 99Bill has also teamed with Baidu.com, China's biggest Web-search engine, through which Baidu will use 99Bill's payment service on parts of its website.
- PayPal regards China as one of its two critical markets (the other is Europe) outside the U.S. eBay has launched PayPal in China via a strategic partnership with ChinaPay. The service plans to leverage its relationship with EachNet, eBay's wholly owned online-auction site. China's major internet portals, including NetEase and Tom Online, have also entered into a partnership with eBay using PayPal as an online payment option.
- YeePay, which means 'easy pay' in Chinese, provides an innovative e-payment platform that enables customers to make real-time payments over the telephone, mobile or online. YeePay was formed in 2003 and has teamed with IBM to build an open standards-based infrastructure to easily yet securely integrate the startup's systems with those of its customers' and banking partners' to deliver electronic payment services. In just five months, YeePay increased its transaction volume from \$120,000 to over \$1.2 million per month.

Overview of Online Payment Solutions: China (continued)

Key Stats and Facts

- In China, an estimated 400 million people have cell phones while only 120 million people use the Internet. (Source: China Ministry of Information Industries)
- AliPay's transaction volume in June 2005 reached \$16.9 million in China, while its registered user base reached 3 million in July.
- 99Bill's service now covers over 2.7 billion domestic and international bank cards and records more than 400,000 users in China. (Source: 99Bill)
- Teaming with two major banks in China, YeePay increased its financial transactions handling from just \$120,000 to over \$1.2 million per month in just five months.



Source: iResearch (China).

Analyst Reactions

- Douglas Jaffe, Financial Insights Asia/Pacific: *"The main story in China is building a basic payment infrastructure, [while the country remains a cash-based society]."*
- Christophe Uzureau, Gartner (HK): *China's online-payment market, like Chinese Internet business as a whole, is still at a "very early stage."*
- Robert Peck, Bear Stearns: *(Talking about challenges in China) "One of the things that's most pervasive [online] in China is fraud and distrust."*

Overview of Online Payment Solutions: China (continued)

Implications/Impact

- Online settlement services promise to remove the difficulty in collecting money, a bottleneck that has prevented e-commerce and mail-order sales from taking off on a full scale in China.

Outlook

- China's online payment market was expected to reach RMB 96 Billion in 2005 and RMB 130 Billion in 2006, up from RMB 71 Billion in 2004. (Source: Analysys)
- Recently, China's central bank issued the country's first guidance for the use of electronic payment services without digital signatures, which limit individuals to internet-based payment transactions of RMB 1,000 (about \$124). Long-term effects remain to be seen but some said that the impact would be limited because most online transactions in China right now are for less than the limit.

Online Payment Solutions: Source Material

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The Presentation Team



Presentation Team

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- *Vice President, Business Development, Click&Buy*

John BaRoss heads up Global Business Development with Telcos, ISPs, Cable Companies, Wireless Carriers and other large enterprises for strategic eCommerce solutions. Webpay International's "Click&Buy" is a fully integrated suite of marketing, sales, storefront, distribution, payment, settlement, and risk management solutions of premium content over the internet via a variety of models (licensing, ASP/outsourcing, etc.) that assist partners with achieving their strategic aims.

Spanning over two dozen years experience with AT&T, encompassing AT&T Labs, AT&T Business, AT&T Consumer and Southern Bell, John has comprehensive insight from over 10 years of heading up a variety of B2B and B2C eCommerce initiatives. He has insight and experience from deal making and implementation of a variety of business, economic and technology models for telcos, consumers and web merchants who offer premium digital content services such as music, online games, film and publishing industries.

John is a member of the Cable & Telecommunications Association for Marketing (CTAM) and the Gerson Lehrman Group Telecome Council. He holds an M.S. in Management from Georgia State University.



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- **Founder, Market Platform Dynamics**
- **Managing Director, LECG's Global Competition Policy Practice**
- **Visiting Professor, University College London**

David Evans is a leading global authority on two-sided strategies and platform-based industries, having worked with leading organizations in the payment card, software, and digital media businesses for more than twenty-five years. He is the author of several books, most recently *Paying with Plastic: The Digital Revolution in Paying and Borrowing*, which has been called the "definitive source on the payment card industry." He is also the author of MPD's Inflection Point Series which delivers critical new thinking on the business challenges facing the payment industry today. A frequent conference speaker on payment cards, he has delivered keynote addresses at several leading industry events, including the 2005 SourceMedia Card Forum Conference.

David has two books coming out in late 2006. One, co-authored by Andrei Hagiu and Dick Schmalensee is entitled *Invisible Engines* and describes how software platforms have transformed industries and driven business innovation. The other, *Catalyst Code*, is about how entrepreneurs can use two-sided strategies to release vast untapped sources of value by creating multi-sided businesses.

David has published more than 80 articles in leading economic and legal journals as well as managerial and opinion pieces in a wide range of publications including *strategy+business*, *The Financial Times*, *The American Banker*, *Credit Card Management*, and *The New York Times*.

A visiting professor at University College London, David is an expert on the economics of competition policy and has testified before courts in the United States and the European Union on matters related to markets and business strategies. He was formerly Adjunct Professor at Fordham Law School where he taught courses in law and economics.

David was awarded his Ph.D. and undergraduate degree in economics from the University of Chicago.



Presentation Team

Andrei Hagiu

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- ***Principal, Market Platform Dynamics***
- ***Assistant Professor, Harvard Business School***

Andrei Hagiu is an expert in the area of software platforms, two-sided strategies and the adoption of both in the Japanese and Chinese markets. He is deeply knowledgeable about the mobile phone industry in Asia, generally, and mobile payment technologies, specifically. He is a research fellow at the Research Institute of Economy Trade and Industry, an economic think-tank affiliated with the Japanese Ministry of Economy Trade and Industry, Tokyo, Japan. He is a Professor in the Strategy group at Harvard Business School.

Andrei's research focuses heavily on two-sided markets. Most recently he has built a theoretical model for studying pricing structures and the organization of two-sided platforms. He is currently applying the insights drawn from this formal work to the analysis of market structure and business strategies in a variety of industries: personal computers, videogames, consumer electronics (mobile phones, PDAs), shopping malls, digital content, etc. He is also involved in competition and industrial policy research projects, in Japan and in the United States.

Andrei graduated from the Ecole Polytechnique and the Ecole Nationale de la Statistique et Administration Economique in France with an M.S. in Economics and Statistics. He holds a Ph.D. in economics from Princeton University.



About MPD

Market Platform Dynamics (MPD) is a management consulting firm that designs smart strategies for platform-based businesses. MPD's team of economists, business strategists, marketing and product development experts use their quantitative expertise, business savvy and strategic sensibilities to help companies effectively unleash profits, create value, and stimulate innovation.

Our work over the years has shown us that many industries share complex business dynamics. Evolving industries such as smart mobile phones, digital media, emerging payments, internet business, and even traditional industries such as publishing, bricks and mortar retail and auctions must mobilize two or more distinct customer groups around a common platform in order to create value and drive profits.

With teams in the United States, Europe, and Asia, MPD has helped traditional and emerging players in all parts of the world more thoughtfully evaluate market opportunities in their country of origin as well as those to expand and leverage their products and services in other established and emerging markets.

MPD helps to eliminate the uncertainty associated with new strategies and business models. We combine quantitative methods with qualitative experience to maximize the value of the platform and the profits of the business.

Our Core Industries

Payment Platforms

MPD principals know the payment industry. Our experts have spent more than twenty-five years researching the industry's most pressing business matters and helping some of the industry's major players successfully navigate its complexity.

MPD teams have helped emerging and traditional players around the world rethink their strategies in light of four change-drivers that are forcing new products, strategies and market focus: changes to industry structure, changes in industry economics, changes in use of payment cards, and changes brought by new technologies and market entrants.

Software Platforms

MPD teams have worked with some of the world's leading global software platforms. We have advised them on a wide range of issues including pricing and product design to strategic positioning and competitive strategies.

Our work in the software platform ecosystem has also provided us with an appreciation of the value and role of emerging players. We are, therefore, well-suited to evaluate and devise strategies that address the threats and opportunities posed to the industry by non-traditional entrants.

Our Core Competencies

Entry and Growth Strategies	Pricing	Customer Segmentation	Product Development	Demand Studies
Strategic and competitive positioning	Platform pricing strategies and structure	Target market identification	Platform design	Conditional logit and other econometric demand studies
Business model design	Multi-sided pricing models	Generational and customer behavior analysis	Product design strategies	Analysis of consumer panel data
"White space" planning	Bundling strategies	Product road mapping	Product bundling	Pricing and preference analysis for new product entry and positioning
Global expansion/entry strategies	Penetration and entry pricing strategies	Customer adoption analysis	Product lifecycle management	Survey design and administration



Related Materials



i-modes and Octopi:

Will Asia Reshape the World's Payment Industry?

Andrei Hagiu*

If you're interested in this topic and the other reports in the Inflection Point Series, please contact us by e-mail at ips@marketplatforms.com or by phone at (617) 374-1337. For more information visit www.marketplatforms.com.

Introduction and Summary

If you want to see the future of payment cards, look two places: your family dinner table and Asia. This, the third Inflection Point Series report, focuses on Asia and, in particular, the very interesting developments in Japan.

It's not just kids in Japan walking into merchants waving their mobile phones at devices at the point of sale and walking out with their purchases. More than 7 million Japanese consumers have mobile phones equipped with contactless payment technology. They can and do use these phones to pay for things at more than 2.5 million Japanese merchants. For now, most of these transactions are facilitated by phones registered with NTT DoCoMo, the Japanese mobile giant owned by Japanese telephone colossus Nippon Telegraph and Telephone.

Of course, Asia is different in so many ways. Credit cards are not nearly as prevalent or as popular in Japan as they are in the United States. China is in the same position today with cards as it is with mobile telephones and much of its infrastructure: it started with little and can therefore pick the best approach without regard to the legacy investments that most industrialized societies must consider. And ownership of personal computers pales in comparison to that of mobile phones, a fact that has some interesting implications for emerging payment systems. That said, Asia is a "greenfield" laboratory where new methods of payment are being tried on a vast scale.

What works well in Asia could easily find its way to the United States and the European Union in just five to ten years.

* Andrei Hagiu is a Principal at Market Platform Dynamics and an Assistant Professor in the Strategy Group at Harvard Business School. To share your thoughts and start a conversation about this topic, e-mail Andrei.Hagiu@marketplatforms.com.

What You'll Know after Reading This Report

- How the FeliCa chip technology has transformed the Asian payments industry.
- Who leads, who lags—and why.
- Who is likely to emerge as the dominant player in Asia—and why.



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Recommended Readings



Recommended Readings

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Market Platform Dynamics

Market Platform Dynamics (MPD) is a management consulting firm that designs smart strategies for platform-based businesses. MPD is led by Founder David S. Evans and Chairman Richard Schmalensee, co-authors of *Paying with Plastic* (2nd ed., MIT Press, 2005). The MPD team of economists, business strategists, and marketing and product development experts use their quantitative expertise, methods, and tools to help companies effectively unleash profits, create value, and stimulate innovation.

MPD's payment industry experience includes work with both traditional and emerging players. Core competencies include entry and growth strategies, demand studies, customer segmentation/analysis, and pricing and product design. In addition, the firm has pioneered the concept of two-sided strategies—those strategies that help complex platform-based ecosystems design business models and pricing strategies that engage multiple customer groups.

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