

The MPD Dialogue Series

Payment Card Industry Futures *Analyzing Change and Assessing Impact*

October 17, 2005
MIT Faculty Club

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Agenda

Payment Card Industry Futures
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This MPD Dialogue session features **Richard Schmalensee**, Dean of MIT's Sloan School and Chairman of Market Platform Dynamics, who will moderate a discussion centered around what he and his colleagues regard as the leading indicators of change in the payment card industry.

David S. Evans, economist, co-author of *Paying with Plastic: The Digital Revolution in Paying and Borrowing* and noted payment industry authority, along with **Andrei Hagiu**, Professor at Harvard Business School, platform-business expert and authority on the payments industry in Japan and China, will share their thoughts and perspectives, as well as highlights from recent Federal Reserve and industry conferences in which these topics were recently debated.

Discussion Topics

The changes taking place at the systems level

A seismic shift in business models is underway

- The Master Card IPO
- The (return of) the American Express franchise model
- The Wal-Mart/GE/Discover alliance

The changes in the economics of the business

The traditional credit card business is eroding

- Credit cards as a commodity business
- The threats to interchange fee revenues
- The expansion of micropayments

The changes driven by technology

Is technology the industry savior or the industry threat?

- Contactless – both here in the US and in Asia
- Internet Payment Systems

The changes in both the users and usage of cards

If you want to know the future, look at what the under 30 crowd is doing

- Who's using what – and where?
- What can be learned from Japan and China?





MPD Fact Sheets



MPD Fact Sheet

The MasterCard IPO

Background

- Along with Visa, MasterCard is one of the two leading credit card associations in the world. Today, it is a privately held firm owned by its members that consists of about 1,400 banks and organizations from all over the world.
- MasterCard provides the electronic network services to its members' credit, debit, and other related payment programs. The firm's directors are mostly executives from its largest members; they provide governance for the benefits of the stockholders.
- MasterCard charges merchants a transaction-based interchange fee in exchange for allowing them access to its network, brand, and other member services, including security and fraud protection. Many lawsuits have been raised over these fees in recent years.
- In August 2005, MasterCard announced its plans to change its corporate structure and to go public sometime in 2006.

Key Details

- Through the IPO, MasterCard will allow investors to hold 49 percent of the stock and 83 percent of the voting power. The MasterCard Foundation, a charitable foundation, will hold 10 percent of the stock and the rest (17 percent) of voting power. The original members will hold about 41 percent of the stake but will have no voting power.
- Most of the new public company's directors will be independent of MasterCard. This is designed to shift control from MasterCard's members to its shareholders.
- MasterCard has stated that it expects to receive about \$2.45 billion as a result of the IPO.

Key Stats and Facts

In 2004, MasterCard:

- processed \$1.5 trillion in sales volume (the gross dollar volume on MasterCard-branded cards),
- processed \$12.4 billion transactions in the world,
- posted \$2.6 billion revenue, with operating income of \$347 million and net income of \$238 million.

Implications and Impact

- The IPO is expected to give the new company more flexibility as well as the ability to establish new and expand existing relationships with merchants.
- Many speculate that a publicly-traded MasterCard could also trigger other non-bank companies (such as Wal-Mart) to enter the credit-card issuing business, further intensifying the competition in the industry.

The MasterCard IPO (continued)

Analyst Reactions

Dan Schatt, Celent:

"MasterCard will be a lot more flexible and thus a lot more innovative, and the pressure to attain profitability will certainly begin to put pressure on Visa to follow suit. If MasterCard starts deals with all of these telecoms, which have been dying to get into cards, then how can Visa sit and watch?"

Eric Grover, Intrepid Ventures:

"In payments, the MasterCard IPO announcement arguably represents the tip of the iceberg to changes that will force prices down and allow new competitors like PayPal and peaceful cohabiters like First Data Corporation to thrive."

Ken Posner, Morgan Stanley:

"Most issuers have had a free ride on the associations' brands... I can't tell you how many managers have told me they have a great brand, but it's almost laughable... I have a hard time keeping a straight face when they make those statements."

Alex 'Pete' Hart, SVB Financial Group (former MasterCard CEO):

"Changing ownership and governance provides them with a broad array of alternatives ... I'd think it is not unreasonable to say that Visa is looking hard at its structure as well. They are even more vulnerable than MasterCard given their larger share of the market."

Source Material:

- *MasterCard To Go Public, Change Structure*, [Dow Jones News Service](#), August 31st, 2005.
- *MasterCard SEC Registration Statement (Form S-1)*, [MasterCard Inc](#), September 2005.
- *MasterCard IPO: Mulling Ripple Effects*, [American Banker](#), September 26, 2005.
- *MasterCard IPO marks industry turning point*, [Cards International](#), September 17, 2005.
- *IPO Spotlight: MasterCard Prospectus Information*, [Dow Jones International News](#), September 19, 2005.

MPD Fact Sheet

The American Express Franchise System

Background

- American Express (Amex) was the early mover in credit card industry – it introduced the American Express charge card in 1958 and once was the market leader until Visa and MasterCard prevailed in 1970s-1980.
- Amex has traditionally worked with third-party banks and other institutions in different countries to issue American Express cards. One such example is Amex's partnership with Russian Standard Bank (RSB) to issue and market Amex card products exclusively in Russia. Amex helped RSB establish both ruble-based and U.S. dollar-based cards which are accepted in the Amex global network. RSB is responsible for card issuing, customer relationship management, customer services, and account management etc.
- Until recently, Amex had a limited ability to work with third-party banks in the US. This was a result of Visa and MasterCard association rules which prevented members of the Visa and MasterCard associations, most of which are leading card issuers in the U.S., from issuing cards on competing networks, including Amex and Discover.

Key Details

- A Supreme Court decision in October of 2004 resulted in the opportunity for American Express to form partnerships with major card-issuing companies/banks in the United States.
- In forming card-issuing partnerships with third-party banks and institutions, Amex provides its closed-loop network, brand name, service standards and other infrastructures, while the partners using that network assume the responsibility of acquiring card-holders, managing accounts, and handling other credit card services.
- Since October of 2004, Amex has established card-issuing partnerships with some of the largest U.S. card-issuers, including MBNA, Citigroup Inc., UBS AG and USAA Federal Savings Bank, though details of the last three deals were not disclosed.

Key Stats and Facts

- Amex has established 87 card-issuing or merchant acquiring partnership arrangements with banks and other institutions in over 95 countries since Amex formed the Global Network Services (GNS) unit in 1997. (Source: Amex 2004 Annual Filing)
- Amex and its partners are currently issuing Amex-branded cards in over 45 currencies. (Source: Amex 2004 Annual Filing)
- In 2004, Amex added a net total of 4.9 million cards, bringing total worldwide cards-in-force to 65.4 million (including branded cards issued by third parties). (Source: Amex 2004 Annual Filing)
- As of Oct. 2004, about 20,000 banks issue cards only through Visa and MasterCard.

The American Express Franchise System (continued)

Implications and Impact

- Many believe that for card-issuers, forming partnerships with American Express represents a great opportunity given its high-spending customers and the premium interchange fees that AMEX charges merchants.
- Adding a new branded card to their card product portfolios also allows card issuers to diversify their offerings, target new customers and tailor different products for different customer needs.
- Though the debit card business has been growing much faster than credit cards, American Express has been left out of the stream since it is not a full service bank and thus has no bank accounts where debit cards could withdraw money from.

Analyst Reactions

David Hochstim, Bear Stearns:

"American Express is, in our view, uniquely positioned to serve the high-volume transactors because they are able to charge a higher fee to the merchant."

Ken Posner, Morgan Stanley:

"Although Visa and MasterCard's premium cards have been around since the late 1990s, each organization has re-emphasized these products in order to pre-empt member banks from joining forces with American Express."

Outlook

- Many believe that Amex will continue to face many difficulties in exporting its overseas success to the U.S. market.
- Some believe that the June 2005 \$35 billion acquisition of MBNA by Bank of America introduces a level of uncertainty surrounding Amex's prior deal with the largest independent card-issuer.
- Card issuers seem intent on hedging their bets and competing with additional products. For example, shortly after the Amex decision, CitiGroup announced it would issue a Platinum MasterCard with many Amex-type features soon after it said it would also issue Amex cards.

Source Material:

- *Cards: Amex Flexes Its Muscles Overseas*, [Bank Technology News](#), Jun. 1, 2005.
- *Card Recharged; American Express and Discover have moved decisively to sculpt a new payments industry, allying with competitors and building new markets*, [Credit Card Management](#), April 1, 2005.
- *Interchange Rate Future In U.S. Is Up for Grabs*, [Electronic Payments Week](#), March 29, 2005.
- *American Express Launches Credit-Card War on Visa, MasterCard*, [Stamford Advocate](#), Sep. 11, 2005
- *A Whole New World for Big Plastic*, [BusinessWeek Online](#), Oct. 5, 2004.
- *American Express Co 2004 Annual Report*, American Express, March 15, 2005.
- *Supreme Court opens bank card business to Discover, American Express*, [Associated Press Newswires](#), Oct. 4, 2004.
- *Pyrrhic Victory; A court decision in favor of American Express opens the credit card business to more competition*, [Forbes](#), May 23, 2005.

MPD Fact Sheet

Wal-Mart/Discover/GE Alliance

Background

- Wal-Mart began issuing its private label credit card in partnership with GE Consumer Finance in 1999. GE Consumer Finance serves as the issuing bank while Wal-Mart puts its "brand name" on the card to encourage cardholders to both sign up and use the card.
- Wal-Mart also provides financial services, such as money orders and pay-check cashing, through its own financial services department as well as third-party partners to their customers, many of whom are low-income working class without bank accounts. By doing so, Wal-Mart hopes to attract more potential shoppers to its stores.
- Analysts suggest that this is part of bigger plan for Wal-Mart to provide more financial services in its branches. Over the past few years, Wal-Mart has been steadily building alliances with financial-services providers.
- In the past, Wal-Mart has also attempted on several occasions to buy a bank. To date, their efforts have been blocked due to current prohibitions on combining banking and commerce. Though Wal-Mart has been denying that they have plans to own a bank and expand into banking business, in July 2005, they applied to open an industrial loan company (ILC) in Utah. Their rationale for doing so, they said is to help them process payments from customers more cheaply. Given their presence in many communities, community banks have expressed concerns that Wal-Mart may eventually usurp their business.

Key Details

- In early 2005, Wal-Mart and GE Consumer Finance introduced a Wal-Mart Discover credit card to the retailer's 100 million customers. The new card carries many of the current Wal-Mart credit card's features such as 1 percent cash back and other rewards. It can also be used anywhere that accepts a Discover card.
- GE Consumer Finance, serves as the issuing bank, manages all the card accounts and keeps all the account receivables and the relevant interest payments and fees.
- Discover provides the processing network. According to GE, it chose Discover given its lower merchant fees. It was also reported that Discover accepted a further rate cut in order to participate in the deal.
- In addition, Discover's network will carry only the transactions that occur outside Wal-Mart stores and will function just like Wal-Mart's proprietary cards inside the stores.
- In March 2005, GE, Wal-Mart and Discover announced the development of two cards for Sam's Club, the wholesale discount subsidiary of Wal-Mart. Both the business card and consumer card carry no annual fee and offer up to 2 percent cash back on all purchases. The cards will also serve as Sam's Club membership cards and provide no-fee cash access to Sam's Club's 46 million members at the register at the club's any locations in the United States.

Wal-Mart/Discover/GE Alliance (continued)

Key Stats and Facts

- Discover Card is the number 4 player in credit card industry in terms of charge volume, trailing Visa, MasterCard, and American Express. (Source: company reports, Credit Card Management)
- From 2003 to 2004, Discover's volume grew by 1.7 percent to \$99.6 billion. (Source: company reports, Credit Card Management)
- In 2004, Discover's total volume in the U.S. was about 1/5 of Visa's and about the same volume as what MasterCard transacted on offline debit alone. (Source: company reports, Credit Card Management)
- From 2003 to 2004, Discover had the smallest growth of all the big 4 card players. (Source: company reports, Credit Card Management)
- Wal-Mart's store card has 10 million cardholders, of which about 8 million are active (Source: GE Consumer Finance, 2005)

Implications and Impact

- Analysts report that the Wal-Mart deal has enabled Discover to successfully build network volume, a retail partnership with Wal-Mart, the largest retailer in the world and a card partnership with GE, the largest provider of store card programs in the U.S. It has been reported that the deal will have a big boost on Discover card's transaction volume, although a modest impact on revenue given the low rates on the new cards.
- It is possible that given the annual transaction volume at Wal-Mart, the new Wal-Mart Discover card could potentially steal market share from other big players. Though Wal-Mart does not disclose exact numbers, analysts estimate that about \$172 billion or 60 percent of Wal-Mart's annual transactions are currently via Visa/Master cards. As a comparison, consumer spending on Discover card was \$99.6 billion in 2004, up 1.7 percent from the previous year.

Wal-Mart/Discover/GE Alliance (continued)

Analyst Reactions

David W. Nelms, Discover Financial Services:

"[The new card] means consumers will have more choices... [for Wal-Mart and other merchants] it helps create volume, and that lowers costs ... and improves efficiency."

D. Anthony Plath, Professor, University of North Carolina:

"It's not a question of if Wal-Mart is going to be a bank, it's a question of when."

John Grund, First Annapolis Consulting:

"Both [American Express and Discover] seek to leverage their network and gain incremental revenue streams, but how they go about it is different [Amex courts major issuers, while Discover tries to partner with high-volume merchants]."

Source Material:

- *Is The Discover Spinoff A Mirage*, [Electronic Payments Week](#), April 26, 2005.
- *Supercentre banking - Wal-Mart and financial services*, [The Economist](#), August 3 2005.
- *It's in the card Wal-Mart's in-house credit card gives patrons the option of making purchases with plastic while allowing the retailer to track their shopping habits*, [The Arkansas Democrat Gazette](#), March 27, 2005.
- *Card Recharged; American Express and Discover have moved decisively to sculpt a new payments industry, allying with competitors and building new markets*, [Credit Card Management](#), April 1, 2005.
- *Wal-Mart, Your New Banker?*, [Business Week Online](#), January 27, 2005.

MPD Fact Sheet

The Expansion of Micropayments

Background

- Micropayments are a means for making payments in situations where the transaction amount is too small (often under \$2) to efficiently or practically collect the money for product or services provided.
- One application of micropayments is to accumulate multiple small transactions and aggregate them into one larger bill, so that the average transaction cost is greatly reduced. Other options include prepaid, subscriptions, and direct-to bill. Some fit different channels better than others. For example, subscriptions have been widely used in digital content distribution business.
- By providing cheap and convenient payment solutions for small purchases on the Web (and potentially in physical places), micropayments have enabled online businesses to sell lower-priced items and digital content such as music and articles quickly, easily and securely.
- Demand for micropayment systems has grown rapidly in the past few years. Its recent surge is closely related to the rise of mobile-based digital content such as ringtones, logos and games. It is also related to the rise of more sophisticated Internet content, like music and games.

Key Details

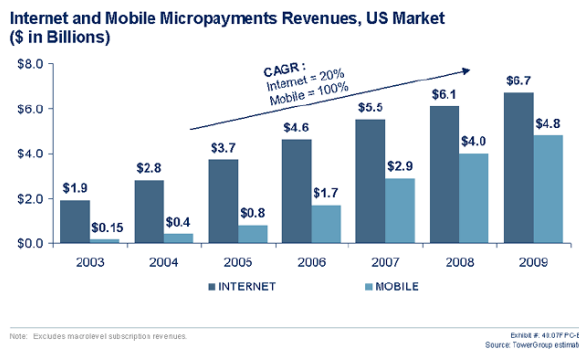
- Although mobile payments (using cellphones or other mobile devices as payment medium) usually are used for small transactions, there is no required relationship between micropayments and mobile payment.
- Micropayments present an important opportunity for online businesses especially digital content businesses, where the prices of digital content (e.g. news, music, etc.) are relatively low. The availability of micropayment solutions enable content owners to charge for their content, which have been largely free since the early days of Internet boom due to the lack of proper payment methods.
- Apple iTunes is one example of how online content providers can successfully employ micropayment systems using the traditional credit card transactions network. By internally aggregating customers' purchases into one larger credit card transaction, iTunes incurs just a single processing fee for multiple actual purchases. Though it is possible that customers make just a single purchase during the card authorization period, iTunes' approach minimizes one-off purchases and in most cases compiles many downloads into one transaction.
- PayPal recently revised its fee structure to encourage the use of micropayments by merchants. Its new pricing package is set at five percent of the total sale plus five cents per transaction.
- Peppercoin is experimenting with a wide range of non-traditional micropayment options that can support a wide range of payment transactions. For example, the Peppercoin solution allows people in Las Vegas to pay their parking meters with cell phones rather than with coins.
- U.K.'s Click & Buy service aims to attract more than one million subscribers by the end of 2005 by allowing online purchases to be processed via the buyers' standard telephone bills.

The Expansion of Micropayments (continued)

Key Stats and Facts

- Roughly 14 million Americans made digital-content purchases of \$2 or less in 2004, a 40 percent increase from a year earlier. (Source: Ipsos Insight)
- In the US, it is expected that the market for internet and mobile electronic micropayments will increase by 23 percent to \$11.5 billion in revenues by 2009 (up from just over \$2 billion in 2003) with internet micropayment accounting for about 58 percent and mobile micropayment for the rest. (Source: Tower Group)

Total Growth of Micropayment Demand, US Market (2003–09)



Implications and Impact

- The next explosion of on line commerce will likely be driven by the availability of convenient (from the consumers' standpoint) and cost-effective (from the merchants' perspective) micropayment solutions.
- Micropayments might also transform the business models for digital and on line content. With the ability to process lower-cost transactions, many online content owners might now consider charging for products that were previously free given the lack of practical payment solutions.

Outlook

- It is a clear possibility that mobile micropayments go beyond digital content purchases on the networks and be used to make physical transactions.
- Micropayments could pose a threat to credit cards, especially in small-amount purchases. Though individual transactions are small, they aggregate into huge numbers and could greatly reduce credit card companies' revenues.
- At the same time, the possibility exists that micropayments could create another growth curve for credit card companies as they increasingly become a substitute for cash.

Analyst Reactions

- **Avivah Litan, Gartner:**

"PayPal's move into the micropayment market was a sound business decision and one that is likely to lead to market domination.... PayPal can beat credit card pricing because it blends credit card, bank account transfer and stored PayPal account value funding on the payer side, lowering PayPal's overall cost of funding any payment... PayPal encourages repeat payer customers to keep money in their PayPal accounts (the company's lowest-cost)"

The Expansion of Micropayments (continued)

Source Material:

- *With PayPal Backing, Will Micropayments Work This Time?*, CIO Insight, September 12, 2005.
- *Small payments... big opportunities*, Electronic Payments International, September 24, 2004.
- *Technology (A Special Report) --- A Dollar Here, a Dollar There... ..adds up to real money; And that's why online companies still see a future in micropayments*, The Wall Street Journal, May 24, 2004.
- *Big Bucks In Micropayments -- Businesses are learning that even small payments can add up, and vendors are offering services to make those transactions possible*, InformationWeek, April 18, 2005.
- "Micropayment," available at <http://en.wikipedia.org/wiki/Micropayments> (visited October 13, 2005).

MPD Fact Sheet

Emerging Technologies: Smart Cards/Contact

Background

- By storing card-holders' identification and card information on a chip, smart payment cards have enhanced cardholder security as well as convenience.
 - To date, smart payment cards have been used primarily to allow the cardholder to authenticate herself by entering a PIN that is checked against the PIN encrypted on the card. This was the motivation for the French, confronted with substantial fraud problems in the late 1980s, to move to smart cards.
 - The card associations in the U.S. had dealt with card fraud by promoting (and creating incentives for) installation of electronic terminals that would authorize virtually all transactions by connecting to the issuer. The U.S. approach was not an attractive option in France because telecommunications were costly and unreliable, making it infeasible to authorize all purchases centrally.
-

Key Details

- Smart cards have been used widely in the Europe to increase transaction security and to fight credit card fraud, but some European merchants and issuers have made the shift unwillingly due to the costs involved in doing so.
 - By 2004, most of Western Europe had begun adopting smart cards. New systems are quickly expanding in other parts of the world including Latin American, Canada, Eastern Europe, as well as Eastern Asia.
 - The adoption of smart cards in the U.S. payment card market has been slow, in part because U.S. banks haven't been able to agree upon an interoperable platform.
 - Another reason cited for the slow uptake is that the credit card networks in the U.S. are more developed than those in Europe and the fraud rates are believed to be lower. The value proposition for merchants, therefore, in the US, is not as strong. Merchants must be on board in order for issuers to adapt cards for cardholder usage.
-

Key Stats and Facts

- The U.S. was the world's third largest market for microprocessor smart cards in 2003, trailing only China and the U.K. But the growth was mostly from non-financial applications. (Source: Smart Card Alliance)
- The fraud rate in the U.S. is around six or seven basis points in face-to-face transactions.
- The fraud rate in France before switching to smart cards was sixteen basis points (1992). After the switch to smart cards, the rate was lowered to roughly one basis point.

Emerging Technologies: Smart Cards/Contact (continued)

Implications and Impact

- By storing ID and financial information in a secure embedded chip, smart cards provide more secure payment card solutions than magnetic stripe cards. And in regions where online payment authorization networks are less developed given a lack of reliable and stable infrastructure such as Europe and Asia, smart cards may be a very attractive alternative despite its somewhat higher cost.
- The lack of a significant reason to buy-in on the merchant (concerned about the cost) or issuer (with relatively low fraud rates in the U.S.) level has minimized the adoption of smart card technology in the U.S. payment card industry, although simple-application cards such as proprietary ID cards are quickly being adopted in government agencies, schools, and other organizations.

Analyst Reactions

- **John C. Gould, Prepaid Advisory Services:**

"Most people would say smart cards are dead, I would not say that. I would say it's in a lull. ...The rest of the world is going through a conversion to smart cards, but the U.S. will be there by 2007."

- **Derrick Robinson, IMS Research (U.K.):**

"Over the long haul, a period of five to six years, the increased requirements of the application isn't growing fast enough. There isn't a step up in complexity that people are prepared to pay for."

- **Randy Vanderhoof, Smart Card Alliance:**

"The challenge, in terms of expanding multi-application and incorporating the payments industry, has been the business issues over who is going to control the real estate on the card - who is going to manage the applications, and how the cost of those applications is going to be shared by all the providers?"

Outlook

- As the cost of chips and infrastructure decreases and EMV (Europay-MasterCard-Visa) standard becomes global, the environment for the widespread adoption of smart cards in the US over the next few years may be a real possibility.

MPD Fact Sheet

Emerging Technologies: Contactless Cards

Background

- Contactless payment devices, powered by radio-frequency (RF) technology, offer the potential for new payment solutions, particularly for transactions at certain locations (e.g. gas stations, drive-ins) where speed and convenience demands are high.
- Some analysts believe that contactless cards will replace at least some cash and check payments, especially in retail outlets where cash is the only payment mechanism currently accepted (e.g. fast food restaurants, public transportation including buses and taxis, etc.)

Key Details

- There are many field tests and rollouts of contactless payment cards in the US including MasterCard International's PayPass and American Express' ExpressPay. Bank of America has also launched QuickWave.
- In May of 2005, Chase announced the official launch of "Blink" – its contactless service. American Express and Citibank have since followed suit.
- Contactless payment cards are more pervasive in some Asian cities. Hong Kong's Octopus Card is one popular example.
- The Octopus Card is used to pay fares across HK's mass transit systems. In addition, it can also be used for to pay bills at convenience stores, conduct transactions at supermarkets, fast-food restaurants, on-street parking meters, car parks and many other point-of-sale applications (e.g. service stations and vending machines). Some 350 merchants now accept the Octopus Card across Hong Kong.
- A similar offering, the Oyster Card was introduced by Transport for London (TfL) in the U.K. in 2003. Now Oyster Card is used by 2.5 million commuters and TfL is planning to expand the card's capabilities to support small purchases at newsagents, pubs, coffee houses and sandwich shops.
- Both the Octopus and Oyster Cards process transactions using their own networks, bypassing the traditional card and/or debit association networks.

Key Stats and Facts

- In 2003, it was estimated that more than 20 million U.S. households were already using RF-based payment systems, of which 75 percent are RF toll transponders and the rest RF payment fobs. (Source: Booz Allen Hamilton)
- A time-motion study revealed that, on average, AmEx's contactless ExpressPay transactions are 53 percent faster than paying with payment cards with no signature, and 63-percent faster than cash. (Source: American Express)

Emerging Technologies: Contactless Cards (continued)

Implications and Impact

- Many believe that contactless cards have significant benefits in terms of time and convenience. Cardholders no longer need to insert the card into a machine and manually sign a receipt.
- For merchants, contactless cards can result in lower maintenance costs since card readers don't get dirty, jammed or broken as much as they did –since there is no contact at all.

Quotes

Randy Vanderhoof, Smart Card Alliance:

"The use of RF technology in a contactless card to be able to process transactions quickly and securely adds another level of value to using smart cards over other technology choices."

David Birch, Hyperion (U.K.):

"Contactless is very hot at the moment...[the card organizations are closely watching the service introduced last year by NTT DoCoMo that enables consumers to pay with a wave of their mobile phones] ... Trying to get contactless payments into customers' hands via mobile phones, that's really the fun stuff."

Outlook

- Despite the buy-ins of some major issuers, there are limitations of contactless. Security has been posited as one, but it is the perceptions of security among consumers that seem to be the more likely culprit (and will require careful marketing to overcome). Technical questions have also been raised related to interference between cards and different standards.

MPD Fact Sheet

Emerging Technologies: Biometrics Technology Payment Solutions

Background

- Biometric technology-based payment solutions use people's biometric information such as fingerprints, facial characteristics to identify a person. Compared with traditional cards and even smart cards, biometric payment solutions have the potential to further reduce potential fraud.
- At present, multiple biometric technologies are in use for authentication. While fingerprint is the leader in payments today, other options (including retinal scanning and voice authentication) are also being explored in other channels. While fingerprint currently has the lead in closed-system payments in the US, the multiplicity of technologies and lack of incentive for buy-in among open-system payment providers will make biometrics a merchant-driven option for the next four to six years in the U.S.

Key Details

- Pay By Touch is a leader in biometric payment solutions and provides merchants with a fingerprint reader that costs approximately \$50 per station, as well as the software that will encrypt the fingerprint into digital data. Pay By Touch data is stored on a secure server that's accessed through a payment-processing service that is operated by IBM. The default payment process is an ACH transaction, the lowest-cost electronic payment alternative.
- Piggly Wiggly Carolina – a chain of convenience stores - is rolling out a national plan to employ Pay By Touch solutions in 85 of the company's 115 stores.
- Some companies are experimenting with the storage of biometric data on smart cards so that the authentication process can be done offline without linking to a central server.
- JCB, one of the largest card issuers in Japan, is testing multiple bio-based technologies. One such example is a fingerprint-reader embedded mobile phone which can be used to purchase JCB gift certificates as well as to check the phone-owner's account. In another test, JCB has integrated biometrics into its chip card which allows the card to serve as both an access card and a payment card.

Key Stats and Facts

- 60 percent of U.S. consumers believe that fingerprint-based technology is the most difficult form of identification to forge or steal. (Source: Kelton Research Group, September 2005)
- Piggly Wiggly Carolina's four-store test has shown that customers using the offering are shopping more frequently at Piggly Wiggly and are buying 10 percent to 15 percent more in total. The cost savings associated with this type of transaction range from more than 45 percent to as much as 90 percent. (Source: Piggly Wiggly Carolina)

Implications and Impact

- Biometrics-based solutions can be used as an important weapon in controlling identity thefts and other credit card frauds.
- It is possible that they might disrupt existing payment card issuers and associations since they allow users to make purchases without carrying a wallet or a payment card.
- Customers report feeling more secure using biometric payment methods given they offer them a lower risk of loss and theft than traditional payment methods, including cash and credit card.

Emerging Technologies: Biometrics Technology Payment Solutions (cont.)

Analyst Reactions

▪ Neil Katkov, Celent Communications

(Talking about Bank of Tokyo-Mitsubishi recently introduced ATM cards that identify consumers with biometric data) "In short, security, privacy and identity theft are on everybody's mind."

▪ Jim Block, Diebold

"The real holy grail in biometrics is let's get rid of the pin so no one has anything to steal anymore."

Outlook

- Biometric payment solutions seem to have cost-saving potential but merchants still worry about their ROI if not enough customers adopt this new technology.
- The lack of an industry standard for bio-payment solutions could make merchants reluctant to opt into any particular system until a standard is made clearer.
- Many expect that over time, bio-based payment solutions could attract more and more users since they provide more secure transactions than traditional payment methods.

Source Material:

- *Inside the New Smart-Card Marketplace*, [Card News](#), May 26, 2004.
- *Smart Card Usage On the Rise, Smart Card Alliance Says*, [Card News](#), October 29, 2003.
- *Smart Cards: Can They Take On U.S. by '07?*, [Bank Technology News](#), April 1, 2004.
- *2004: Brighter Days Ahead?*, [Card Technology](#), December 1, 2003.
- *U.S. Signs on with Smart Cards*, [PR Newswire](#), October 28, 2003.
- *Smart card the way to go*, [BusinessWorld](#), November 2, 2004.
- *SIMs Lead Smart Cards To New Heights*, [Card Technology](#), December 1, 2004.
- *No cash, no problem: Technology finding new ways to pay*, [Associated Press Newswires](#), June 22, 2005.
- *Bad credit; Alternative technologies can offer retailers freedom from the tyranny of onerous credit card fees*, [Progressive Grocer](#), June 1, 2005.
- *Brand Awareness; The four big payment brands are counting on contactless chips to inject some excitement into their smart card programs*, [Card Technology](#), March 2005.
- *Will Pay-By-Finger Pay For Itself?*, [Card Technology](#), May 2, 2005.
- *A Snapshot of the U.S. Payments Landscape*, [Federal Reserve System](#), August 2002.
- *Privacy concerns, expense keep biometrics out of ATMs*, [Associated Press Newswires](#), October 11, 2005.
- *Paying with Plastic*, www.payingwithplastic.org.

MPD Fact Sheet

The Payment Card Industry in Europe

Background

- Europe is regarded as among the world's most highly developed card markets as purchases on cards continue to rise and the numbers of transactions steadily increase.
- Debit cards have done well especially in continental Europe, where they seem far more popular than credit cards.
- The U.K. in particular has an exceptionally high level of penetration of both debit and credit card usage. Yet many affluent and large economies (e.g. France, Spain) throughout Europe have underdeveloped credit card industries.

Key Details

- More and more people throughout Europe use payment cards in everyday purchases, as evidenced by the decreasing average transaction value and increasing transaction frequency.
- Debit cards continue to be the most popular payment card in Europe, accounting for more than half of all cards held in Europe. The volume of debit cards has grown faster than credit card in countries such as U.K., where credit cards had more recently been the payment card of choice.
- One of the more significant developments in Europe over the past two years has been the roll-out of smart cards and the EMV (Europay-MasterCard-Visa) standard. In Europe, financial incentives and penalties have been put in place in order to facilitate and enforce the changeover to this standard. For example, Visa and MasterCard set a deadline of January 1, 2005, for adoption by its merchants and issuers. After that date, fraudulent loss liabilities would be shifted to whichever party (retailer or card issuer) was non-chip compliant. As a result, it appears that Europe has moved ahead of the majority of the world in the adoption and use of smart cards, with EMV emerging as the global standard.

Key Stats and Facts

- The total European card market, in terms of number of cards, grew at a compound annual growth rate of 8.8 percent over the period 1998 - 2002. (Source: Business Insight)
- Western Europe's cards market grew by 80 million cards (12.5 percent) to 721 million cards in 2002 - 2004. (Source: Retail Banking Research)
- Debit cards continue to be the most popular payment cards, accounting for 50.7 percent of all cards held in Europe in 2004. Credit cards account for 33 percent of the market and charge cards make up the remaining 16.3 percent. (Source: Retail Banking Research)

The Payment Card Industry in Europe (continued)

Implications and Impact

- Visa and MasterCard's liability shift policy did play an important role in pushing the Europe card industry to chip-based technologies. Overall, European banks have been positive about the migration to smart cards, and expect that the use of new technologies will help them reduce fraud risk.
- However, many merchants expressed great concern about the deadline and said they would rather be cautious in the migration and deal with the increased fraud risk if necessary. As of the end of 2004, according to Visa, chip-based cards only accounted for about 30 percent of all Visa cards; the migration of POS terminals and ATMs across Europe was also in a similar stage.

Analyst Reactions

Paul Davies, Mintel:

"The fact that the British accounted for the majority of expenditure on credit cards in the EU clearly shows how different the attitude towards credit and borrowing money is in the U.K. compared to other EU countries. Today, the British consumer is constantly bombarded by adverts for loans, purchasing on credit and credit cards, and it seems that debt has become just a part of life for many people in the U.K."

Outlook

- While debit and credit card numbers continue to grow in Western Europe, cross-border card issuers seem to seek greater opportunities in Central and Eastern Europe and Turkey, where the financial markets are still developing but appear to have great potential.
- The migration to smart cards continues throughout Europe.
- HSBC has begun to introduce contactless payments in the U.S., and at least one other European bank is planning to do so in the near future. However, contactless payments might have a long way to go in the Europe since smart cards are already in place and adding a contactless feature requires more expensive "dual interface" chips.

Source Material:

- *European liability shift puts focus on EMV*, [Cards International](#), February 24, 2005.
- *Opportunity abounds in European cards market*, [European Banker](#), February 19, 2002.
- *Credit and Debit Cards: Playing your cards right*, [European Banker](#), September 30, 2005.
- *The European Cards and Payments Market Outlook*, [Business Insight](#), January 2005.
- *Europe's regulatory burden bites into the cards industry's profits*, [Cards International](#), June 7, 2005.
- *Britain addicted to credit on plastic*, [The Scotsman](#), March 17, 2004.
- *European Banks Look Past Their Home Base For Contactless Payment*, [Card Technology](#), October 3, 2005.

The Payment Card Industry in Asia

Background

- In many Asian countries, carrying debt is usually regarded as shameful and the use of credit cards in stores or restaurants is not widespread. As a result, the Asian payment card market represents a relatively small proportion of its large population. Many countries in this region remain largely cash-based communities, and many merchants (excluding those upscale stores or those in large cities) do not accept payment cards.
- However, Asia is a valuable opportunity for credit card companies for two reasons: its huge scale and its rapid economic growth, especially in China and India. Purchase habits are also slowly changing as the disposable income increases and knowledge about credit cards becomes more widespread.

Key Details

- In 2004, Asia was the largest region for the global financial cards market, with a 57 percent share of total value. This is largely due to the presence of three very large markets - Japan (a high value, relatively developed market), China (underdeveloped but with the largest population in the world) and South Korea (relatively developed but still recovering from bad debt issues).
- Currently, a large part of Asia's payment card market is concentrated in the more developed and mature economies such as Japan and South Korea. At the same time, China represents a potential huge opportunity not just in Asia but in the world as well. Foreign issuers are entering China despite the fact that China remains a cash country and has no national credit database.
- International banks are keen to expand their payment card businesses into India, but are still cautious about potentially low profit margins and high default risks- India's combination of relatively modest personal incomes and high delinquency rates on credit card purchases create an understandable uneasiness.
- That said, the battle between entrenched local issuers and global players is becoming more intense. The current leading credit and charge card companies in Asia include UC Card Corporation, Ltd., Credit Saison Corporation, Ltd., Citigroup, HSBC and Standard Chartered. Yet other large players including GE Consumer Finance, are actively expanding into new markets while at the same time tailoring their offerings to reflect the culture and spending habits of the region.
- Asia is also a fast mover in new payment technologies such as smart card, contactless cards, and mobile payments. For example, contactless transit cards such as the Octopus Card, are widely used in some big cities in Japan, Singapore and China. The mobile wallet, the ability to use a cell phone or other portable device for payment, originated in Japan and seems likely to migrate west as Generation X and Y drive the demand for a single device that serves multiple purposes.

The Payment Card Industry in Asia (continued)

Key Stats and Facts

- The number of payment card issuers in Asia had surpassed 600, with over 2,000 card offers available. (Source: Development Bank of Singapore. October 2004).
- One estimate of the bankable population in Asia (those earning over \$1,000 a year) is predicted to double to 600 million by 2010, up from 300 million in 2001, leaving an estimated 3.8 billion without formal banking relationships. Receivables on credit cards has topped \$145 billion. (Source: GE Capital Asia, 2004).
- Cash remains the dominant form of payment at merchants in Japan. In 2000, credit cards accounted for only 6 percent of consumer spending. Even then, the credit function is mostly unused in Japan as about 85 percent of credit card transactions involve an agreement by the consumer to pay the full transaction amount to the card issuer within 30 days. The debit card was not introduced in Japan until 2000 and is rarely used. (Source: Payingwithplastic.org 2005).
- Visa's 22 member banks in the Chinese mainland have issued 6.14 million Visa international cards in China from Jan-May 2005, tripling 2004's figure for the corresponding period. Visa's data shows there are 10 million credit cards in China as of May 2005. (Source: Visa, May 2005).
- Fewer than 1 percent of China's 1.3 billion people own a credit card. As of October 2005, 12 million credit cards are in circulation in China, compared with 800 million debit cards, which are used mainly at cash machines. (Source: McKinsey, October 2005)

Implications and Impact

- With the great potential in both developed and developing economics in Asia, competition among issuers and systems will only increase as the region's large population and stable employment rates attract global, regional, local and non-traditional players.
- A series of merger and acquisitions are re-shaping the payment card industry in Asia. For example, UFJ Bank announced its plan to acquire Nippon Shinpan by fall 2005 to form the second largest company in the Japanese credit and charge cards market. The new company will have over 23 million cardholders.
- Telecom players such as NTT DoCoMo are also expanding in the consumer finance markets by buying stakes in two of the largest card issuers in Japan. NTT DoCoMo has been promoting its mobile payment solutions (e.g. mobile wallet) for daily purchases.
- The migration to chip-based cards offers issuers with the possibility of being innovative in their product offerings, including the possibility of greater storage space and the convergence of multi-applications.

The Payment Card Industry in Asia (continued)

Analyst Reactions

Edmund Koh, Development Bank of Singapore:

(Regarding the competition between local issuers and international players in the Asian market) "The higher the market share, the more it will be eroded, the smaller players will use guerrilla tactics [and] the large entrenched players have the most to lose."

Ridhwan Bakar, Frost & Sullivan/Asia Pacific:

(Regarding Japanese and Korean operators' bet on wallet phones) "It would be safe to say mobile wallets would be available, if not common, in markets such as Singapore, Hong Kong, Taiwan and Australia before the next decade."

Outlook

- It is expected that currently less developed markets such as India and China will continue to grow at a faster rate than other countries given its size and potential.
- It is also expected that over time, the payment card industry in Asia will become more balanced and less skewed towards Japan and Korea.
- Given their lower financial risks, debit cards are expected to grow faster than credit cards in Asia, just as they have in many other regions.
- New card technologies, especially smart cards, contactless cards and cell-phone-based payment solutions will experience fast growth in the foreseeable future.

Source Material:

- *Asia-Pacific - Credit & Charge Cards - Competitive Landscape*, [Datamonitor Market Research](#), November 1, 2004.
- *CPAP: Confidence high as Asian cards market keeps on growing*, [Cards International](#), October 4, 2005.
- *Wooing China's Credit-Card Users—Banks Bear Gifts as They Jockey In a Nascent and Fickle Market; Will It Spoil Industry's Profits?*, [The Wall Street Journal](#), October 3, 2005.
- *Key trends and developments in global financial cards market*, [Brand Strategy](#), June 9, 2005.
- *Conference Reports: The industry of the decade*, [Cards International](#), May 13, 2005.
- *Benchmarking global best practice*, [Cards International](#), October 28, 2004.
- *Rising Security Concerns Drive Asia Pacific Financial Cards Industry to Migrate From Magnetic Stripe to Chip-Based Cards*, [PR Newswire \(U.S.\)](#), August 30, 2005.
- *Asia's plastic revolution: the lure of the credit card heralds a culture change in a region of cautious savers*, [Financial Times](#), February 2, 2004.
- *Reuters Summit: Weak tone seen for Japan's wallet phones in Asia*, [Reuters](#), September 15, 2005.

MPD Fact Sheet

Payment Card Habits: Gen X and Gen Y in the U.S.

Background

- Generation X refers to people born between 1965 and 1980. In U.S., 50 million people or 17 percent of the population belong to this group. Members of Gen X spend \$125 billion annually on consumer goods in the U.S. and include a high percentage of entrepreneurs.
- Generation Y refers to the more than 57 million people born between 1981 and 1995. The total annual income of generation Y members is about \$211 billion. Generation Y spends \$172 billion per year, saves \$39 billion per year, and drives many adult purchasing decisions. Many experts believe that the Y generation represents the future market for most consumer brands.

Key Details

- Credit card issuers target college students from the first day they arrive on campus. As a result, many people get their first credit card while they are still freshmen and about one out of four young people got a card even before they go to college.
- Recent studies suggest that teenagers are less interested in credit cards than they used to be. A recent survey (2005) of 2,000 teenagers reveals that only 15 percent of them said they were interested in getting a credit card in their own name, down from 34 percent just five years prior.
- The percentage of Gen X or Gen Y who actually have credit cards in their own names has also declined over that same period. Instead, young people carry debit cards and charge cards.
- Many believe that the attitudes of young people toward credit, and the availability of new payment methods (e.g. payment cards) and payment mechanisms contribute to this downward shift.

Key Stats and Facts

- Gen Y has their own money, despite perceptions to the contrary. The average yearly disposable income in the United States is expected to grow to \$2,602 by 2006, up 15 percent from 2005. (Source: iMedia connection, 2003)
- More than 65 percent of Gen Y have purchased a technology product with their own money; and 40 percent are willing to pay to download movies, music and TV shows; 68 percent purchase gifts online. (Source: Creditguard.org)
- Before age 19, kids and teens buy online using their parent's credit cards. It is expected that online shopping among youth will grow significantly as enabling strategies such as e-wallets, online purchase cards and bank accounts, and debit cards targeted to teens are adopted. Generation Y would spend more online but doesn't feel enabled to do so given their lack of personal credit cards. (Source: Zandl Group)
- One in five young people age 8 to 24 did purchase something using the Internet in 2004. (Source: Zandl Group)
- Gen Y is devoted users of cell phones. 56 percent of kids between 11 and 17 either have or share a cell phone in the United States, as do 85 percent in the United Kingdom, and 90 percent in Japan.

Payment Card Habits: Gen X and Gen Y in the U.S. (continued)

Key Stats and Facts (continued)

- Eleven percent of all teens now have credit cards, and 6 percent of teens ages 13 to 14 have credit cards. (Source: Teens and Personal Finance)
- The number of 18- to 24-year-olds declaring bankruptcy has increased 96 percent in 10 years. Bankruptcy filings from younger generations are more directly linked to credit issues than those from middle-aged people, who are more likely to file bankruptcy as a result of medical pitfalls or job loss. (Source: Credit Abuse Resistant Education)
- Roughly 75 percent of college students had at least one credit card and 43 percent had more than one. An average college undergraduate has accumulated \$2,169 in credit card debt at the time of their graduation. (Source: Nellie Mae)
- Debit card transactions represent 74 percent of all transactions made by Gen Y consumers. This is compared to less than 70 percent by Generation X and a little more than 60 percent by Baby Boomers and less than 60 percent for all consumers. (Source: Bank of America, 2005)
- Research shows that younger users' payment and content consumption habits are more flexible than those of older consumers. (Source: Tower Group)

FSIs Must Consider Micropayments to Support Younger Users' Evolving Content Habits (2003)

US Internet Users Who Have Tried ...

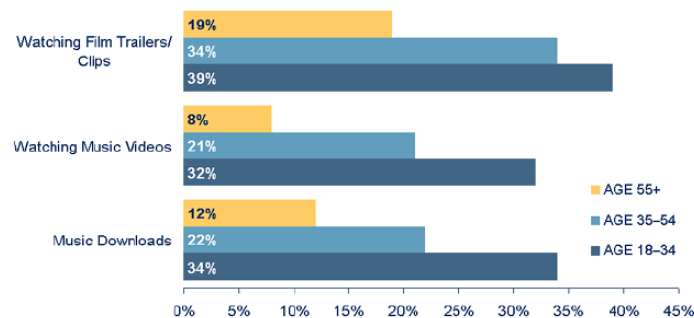


Exhibit # 43.07FPC-ES
Source: comscore Oct. 2003 (data refers to preceding 12 months), TowerGroup

Implications and Impact

- Credit card companies have introduced many new offerings targeting young customers. For example, MasterCard recently launched a prepaid card with pictures of music stars. Visa's prepaid card offerings include a Hilary Duff (former Disney Channel star) card and a Visa Buxx card for pre-teenagers. The companies report that these cards help youth build proper financial planning skills.
- American Express has also introduced a series of no-fee credit cards targeting young but high-spending customers.

Analyst Reactions

Rob Callender, Teenage Research Unlimited:

(Talking about the decreased number of credit cards hold by teenagers) "I wouldn't be surprised if this data shows they've learned from mistakes of the past and they aren't willing to make the same mistakes in the future... This group of teens has a great head on their shoulders. They're driven. They're motivated. They're savvy."

Jim Tehan, Myvesta.org:

"It's the last frontier for credit card companies trying to expand their markets. They're looking younger and younger because if they can get that first card in their hands, they're a customer for life."

Matthew Josefowicz, Celent:

"We think that approaching college students and new entrants into the work force is very important for investment firms, primarily because they're untargeted."

Outlook

- Many believe that credit card companies should spend more time attracting young customers and studying their spending behaviors. Though Gen Y is still young today, they remain the largest consumer group in U.S. history and their spending power will only get stronger in the near future. Building the loyalties of these young users will likely remain a high priority for card issuers.

Source Material:

- *Your Money: Many get first credit cards at college*, The Atlanta Journal – Constitution, August 28, 2005.
- *Credit kids*, The Free Lance-Star, May 7, 2005.
- *Hip Check: American Express Tries to Find Its Place With a Younger Crowd*, The Wall Street Journal, September 22, 2005.
- *Teenagers and Their Plastic, the Rites of Passage*, The New York Times, June 25, 2005.
- *Generation Y Is New Territory For Financial-Service Marketers*, The Wall Street Journal, September 26, 2005.
- *Electronic Micropayments: Market Development, Issues, and the Potential Impact on FSIs*, Tower Group, July 2004.

The Presentation Team



Presentation Team

Richard Schmalensee

- **Chairman, Market Platform Dynamics**
- **John C Head III Dean, MIT Sloan School of Management**
- **Professor of Economics and Management, MIT**

Dick Schmalensee's work in the payment card industry spans more than two decades. He is the co-author of *Paying with Plastic: The Digital Revolution in Paying and Borrowing*. His industry research and consulting expertise includes the design and structure of payment systems and their underlying business models, including strategic pricing strategies.

Dick, along with David Evans, has helped develop a new area of research in the field of economics known as two-sided strategies. These strategies help complex platform-based ecosystems design business models and pricing strategies that engage multiple customer groups. The application of these strategies can be seen in industries ranging from payment cards, software platforms, video games, internet businesses and mobile telephony to auctions, exchanges and advertising-supported media. Two-sided strategies are the subject of a Harvard Business School Press book that will be published in the Winter of 2006 and which will feature David and Dick as co-authors.

Dick's economic areas of expertise are centered on industrial organization and its application to managerial and public policy issues. He has contributed to various publications including *American Economic Review*, *Foreign Affairs* and *Bell Journal of Economics* and has authored several books. He is a Member of the International Academy of Management, a Fellow of the Econometric Society and the American Academy of Arts and Sciences, and editor of *Competition Policy International*.

As a consultant to private firms and government agencies, including the Bureau of Economics of the U.S. Federal Trade Commission and the Antitrust Division of the U.S. Department of Justice on the 1992 Merger Guidelines, Dick has testified in both federal and state courts, before several congressional committees, and before the Federal Trade Commission.

Dick has been the Dean of the MIT Sloan School since 1998. Previously, he served as a Member of the U.S. President's Council of Economic Advisers from 1989 through 1991, where he had primary responsibility for domestic and regulatory policy, including environmental and telecommunications policy, and for U.S. assistance to Central and Eastern Europe.

Dick received an S.B. in economics, politics, and science from MIT in 1965 and a doctorate in economics from MIT in 1970.



Presentation Team

David S. Evans

- **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 recent SourceMedia Card Forum Conference in Orlando.

David has two books coming out in late 2006. One, co-authored by Andrei Hagiu and Dick Schmalensee is entitled *Apple to Zoomer*, which 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

- ***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



Related Materials

- **Punctuated Equilibrium in Payment Cards: Where Are We Now?**

Richard Schmalensee, presentation given at the 2005 Bank Card Conference, September 2005.
<http://www.marketplatforms.com/events2005.cfm>

- **At The Crossroads: Capitalizing On The Industry's Inflection Points**

David S. Evans, presentation given at the Card Forum & Expo, May 4, 2005

- **The Industrial Organization of Markets with Two-Sided Platforms**

David S. Evans and Richard Schmalensee, SSRN working paper, August 2005.
<http://www.marketplatforms.com/publications.cfm>

- **Series Overview: "New Insights on the Payment Card Industry: Who Will Be The Future Powerhouses of the Payment Industry? Or your Competition?"**

David S. Evans, Inflection Point Series, April 2005.
<http://www.marketplatforms.com/inflectionpointseries/>

- **Report Overview: "The Perfect Storm: Why Gates of Creative Destruction May Soon Sweep the Card Industry and How to Survive and Prosper"**

David S. Evans, Inflection Point Series, April 2005.
<http://www.marketplatforms.com/inflectionpointseries/>

- **Report Overview: "Credit's Mid-Life Crisis: Time to Get a Corvette"**

David S. Evans, Inflection Point Series, September 2005.
<http://www.marketplatforms.com/inflectionpointseries/>

- **2004: The Beginning of Change**

David S. Evans, Credit Card Management, March 2005

- **Midlife Crisis**

David S. Evans, Intelecard, September 2005

- **Are Payment Cards Headed for a Mid-Life Crisis?**

Electronic Payments Week, Vol. 2, Issue 38

Recommended Readings



Recommended Readings

- **Innovations, incentives, and regulation: Forces shaping the payments environment**

Sujit Chakravort and Carrie Jankowski, *Chicago Fed Letter*, No. 218a, The Federal Reserve Bank of Chicago, September 2005.

http://www.chicagofed.org/publications/fedletter/cflseptember2005_218a.pdf

- **Changing E-Payment Payment, Networks in the U.S.: The Strategic, Competitive & Innovative Implications**

Brian Mantel and Tim McHugh, Federal Reserve Bank of Chicago.

http://www.chicagofed.org/emerging_payments_and_policy/files/evolving_epayment_networks.pdf

- **Why Invest in Payment Innovations?**

Sujit Chakravorti and Emery Kobor, Emerging Payments Occasional Papers Series, Federal Reserve Bank of Chicago, June 2003.

<http://www.chicagofed.org/publications/publicpolicystudies/emergingpayments/pdf/eps-2003-1B.pdf>

- **Retail Payments Research Project**

Federal Reserve System, 2002.

<http://www.philadelphiafed.org/pcc/research/RetailPaymentsResearchProject.pdf>

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.

www.marketplatforms.com

