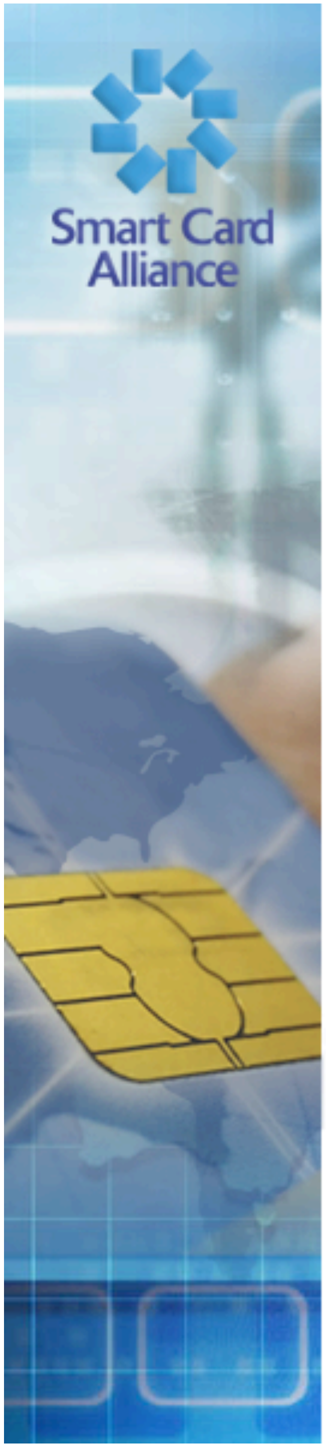
EMV Migration Study and Market Analysis: Mexico and Brazil

December 01, 2009

Wisdom words…

If you once forfeit the confidence of your fellow citizens, you can never regain their respect and esteem. It is true that you may fool all of the people some of the time; you can even fool some of the people all of the time; but you can't fool all of the people all of the time.

Abraham Lincoln



Trust = Mindset

Environment

Safety

Logical

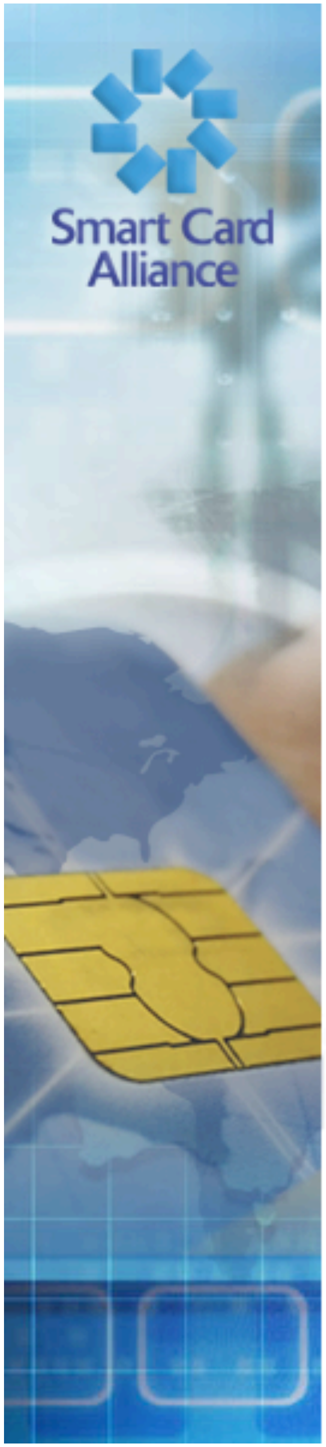
Data

Knowledge

Accuracy

Facts

Security



A financial document is born when…

-Technology
-Solutions

- Viability
- Convenience

Vendors
Standards

Evaluators
Budget & Results

Smart Card Alliance

Consultants
Facts Neutrality

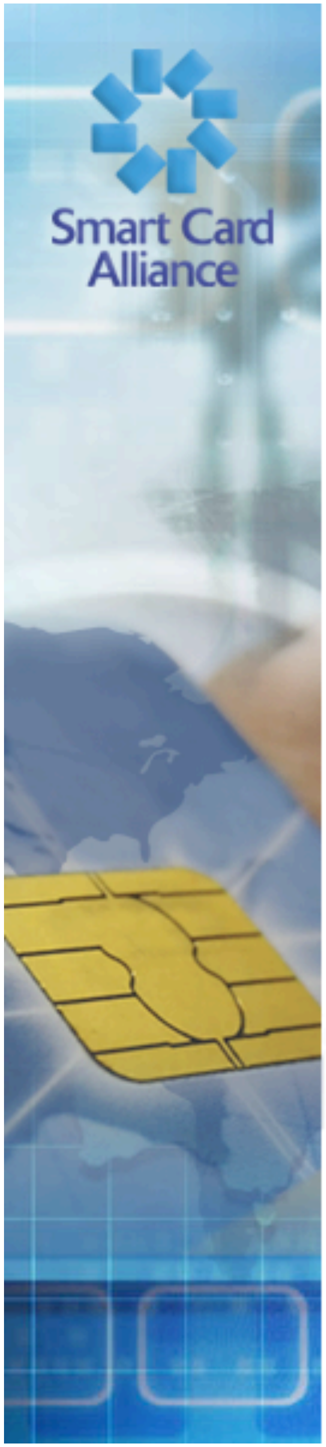
Financial Institutions
Fiduciary Responsibility to shareholders

-Criteria
- Concept

-Purpose
-Needs of Costumer's

When an end user needs help…

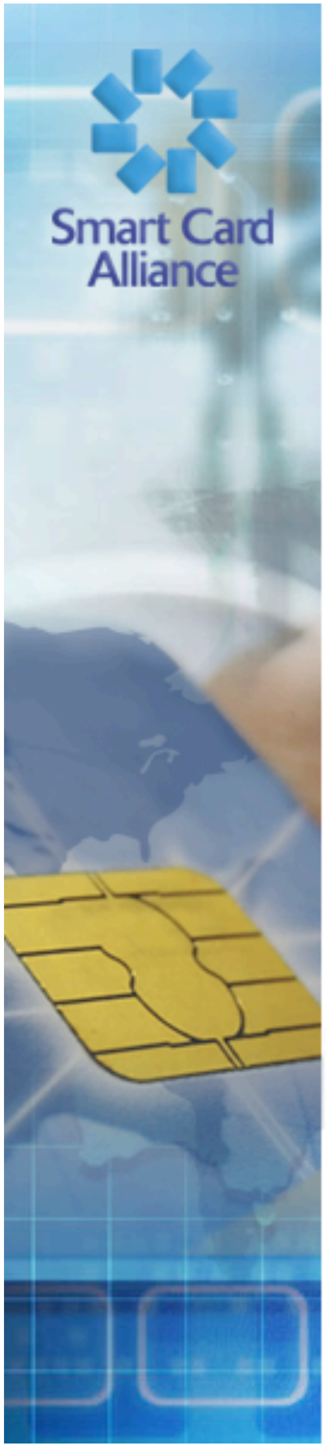
- How should I start?
- What about technology?
- Vendors, system integrators?
- Processes?
- Back Office?
- Infrastructure?
- Standards?



Smart Card Alliance

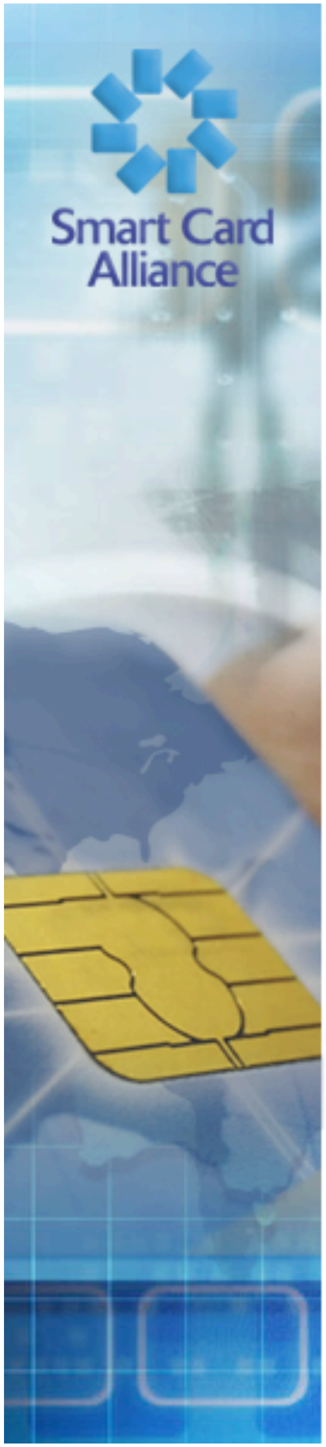
The Smart Card Alliance is a not-for-profit, multi-industry association working to stimulate the understanding, adoption, use and widespread application of smart card technology. The Alliance invests heavily in education on the appropriate uses of technology for identification, payment and other applications and strongly advocates the use of smart card technology in a way that protects privacy and enhances data security and integrity. Through specific projects such as education programs, market research, advocacy, industry relations and open forums, the Alliance keeps its members connected to industry leaders and innovative thought. The Alliance is the single industry voice for smart card technology, leading industry discussion on the impact and value of smart cards in the U.S. and Latin America.
www.smartcardalliance.org

The **S**mart **C**ard **A**lliance **L**atin **A**merica (**SCALA**), established in July 2005, to develop specific projects in areas such as: tri-lingual educational programs (English, Spanish, and Portuguese), market research, pavilions, conference events, online resources, newsletters, media publications, and discounts at industry events, allowing members to stay connected in a united industry to promote innovative thought.
http://latinamerica.smartcardalliance.org or ebetts@smartcardalliance.org



About Visa Inc.

Visa Inc. operates the world's largest retail electronic payments network providing processing services and payment product platforms. This includes consumer credit, debit, prepaid and commercial payments, which are offered under the Visa, Visa Electron, Interlink and PLUS brands. Visa enjoys unsurpassed acceptance around the world, and Visa/PLUS is one of the world's largest global ATM networks, offering cash access in local currency in more than 200 countries and territories. For more information, visit www.corporate.visa.com.



First Annapolis
Consulting | M&A Advisory Services

First Annapolis, founded in 1991, is a specialized management consulting and mergers and acquisitions advisory firm with an unmatched focus on the payments industry.

With over 50 professionals, First Annapolis specializes in advising clients on strategic and tactical matters across all major payment products and services including credit cards, deposit access products, and commercial payment vehicles. We bring an unparalleled level of expertise in traditional and emerging payment market segments.
Most importantly, we are committed to helping our clients succeed by providing exceptional insights that generate lasting value. We encourage you to learn more about First Annapolis and our services.

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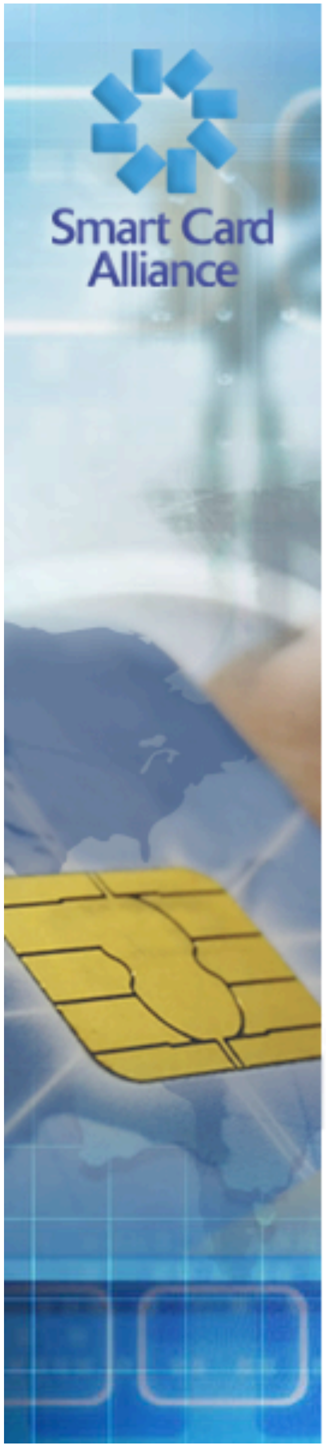
Study Overview

Study Overview

The Smart Card Alliance Latin America and Visa Inc. commissioned First Annapolis Consulting to survey issuers and acquirers on the current state of EMV migration and the long-term growth of the EMV market in Brazil and Mexico.

Study Objectives

- Identify the key factors influencing the adoption of EMV/chip cards and EMV compliant merchant terminals.
- Understand the challenges encountered during the EMV/chip migration process.
- Explore how different organizations are leveraging EMV/chip technology to improve performance, introduce new products and services, and capture new market opportunities.
- Discover the "Next Wave" in the evolution of the EMV market.
- Assess the business impact of EMV/chip adoption for issuers and acquirers.
- Forecast the size of EMV/chip market by 2015 (i.e., cards, transactions, terminals).



Study Overview

Issuers and acquirers from Mexico and Brazil participated in the survey.

Survey Methodology

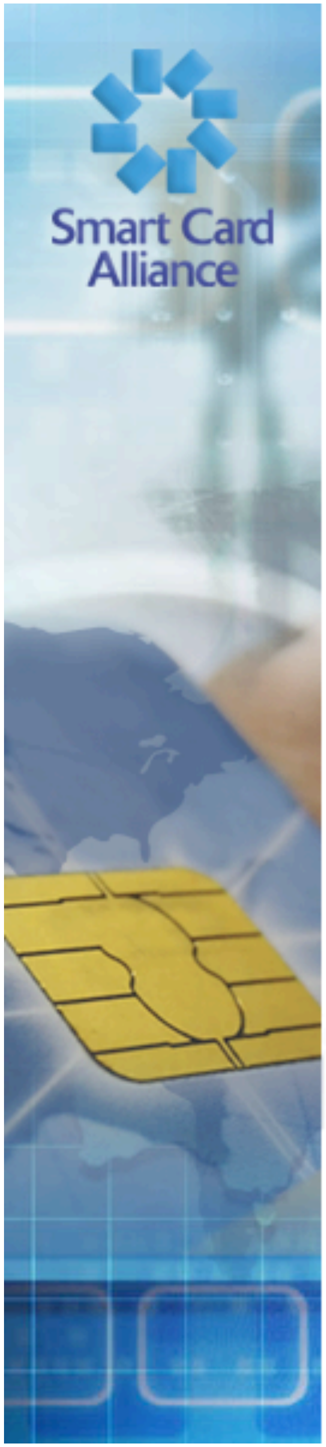
Components	Description	Objective
Participants	• **Targeted participants represented financial institutions recognized in their markets for their experience with EMV/chip cards.** • **Issuers included a mix of medium to large financial institutions as well as a few retailers.**	• **Target financial institutions that could objectively share real examples and that had experience associated with the benefits, challenges, and advantages of EMV/ chip cards.** • **Capture multiple perspectives with EMV/chip cards, depending on:** ➢ Size ➢ Type of organization ➢ Value proposition
Questionnaire	• **Issuer survey: 27 questions** • **Acquirer survey: 21 questions**	• **Gather objective information and insights on EMV/chip card migrations, adoption drivers, challenges, benefits, and business impacts.**

Targeted phone interviews were also conducted to expand, clarify, or confirm survey responses.

Study Overview

Learnings collected from the surveys and additional market data research were used to build a forecast of the EMV/chip market in Brazil and Mexico.

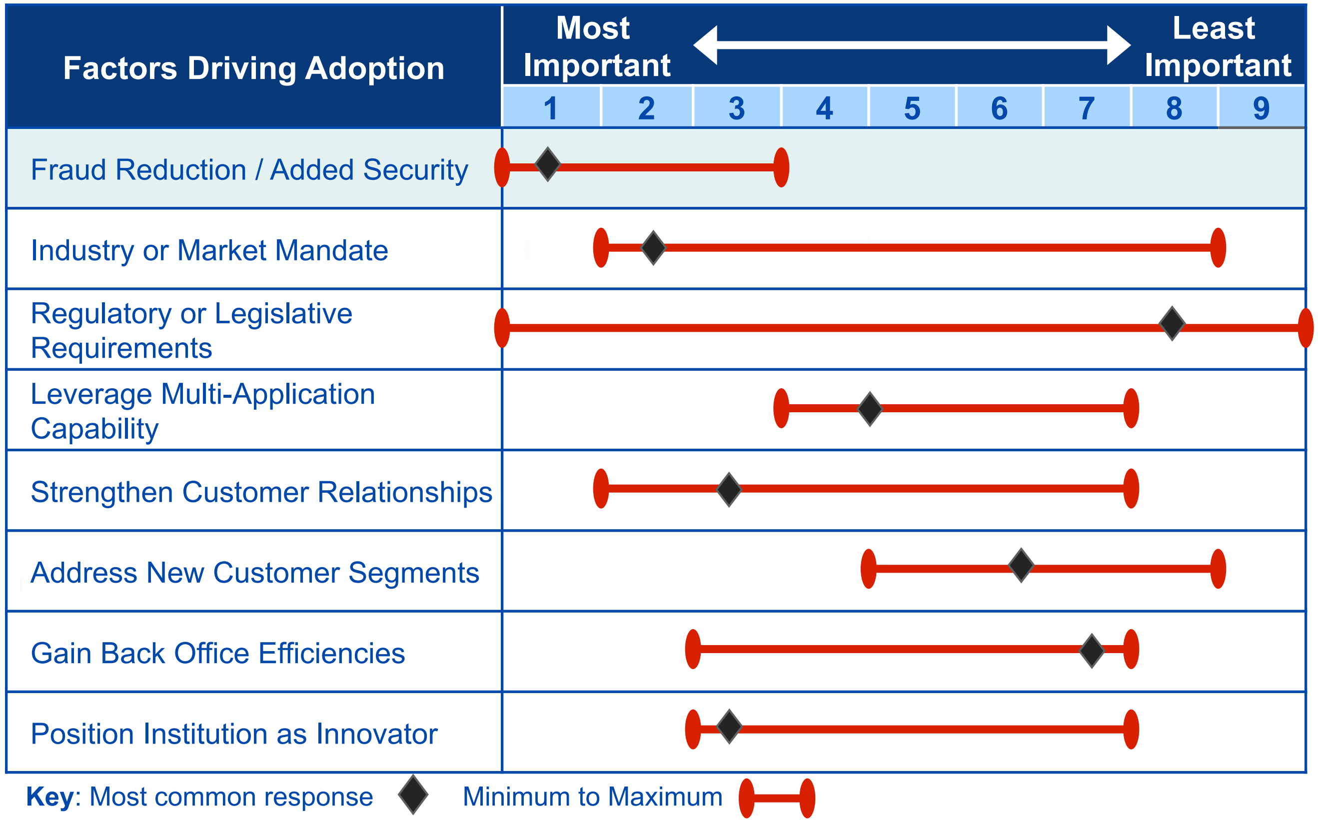
Steps	Explanation
Expertise from SCALA and Visa project teams	• Provided direction and input on market trends, EMV/chip card functionality, and key assumptions.
Historical Performance	• Leveraged publicly available data to establish a baseline of the total market in order to build a market penetration forecast.
Adoption Trends in Latin America	• Utilized primary and secondary research on other payment solutions (e.g., debit, prepaid) in the region in order to develop growth assumptions, rates, and timeframes.
EMV Adoption Benchmarks	• Identified relevant experience on how EMV payments have emerged in other international markets and synthesized relevant learnings from pilot tests and early roll-outs.
Surveys and Interviews	• Validated and enhanced assumptions based on information shared by survey respondents in questionnaires and/or interviews.



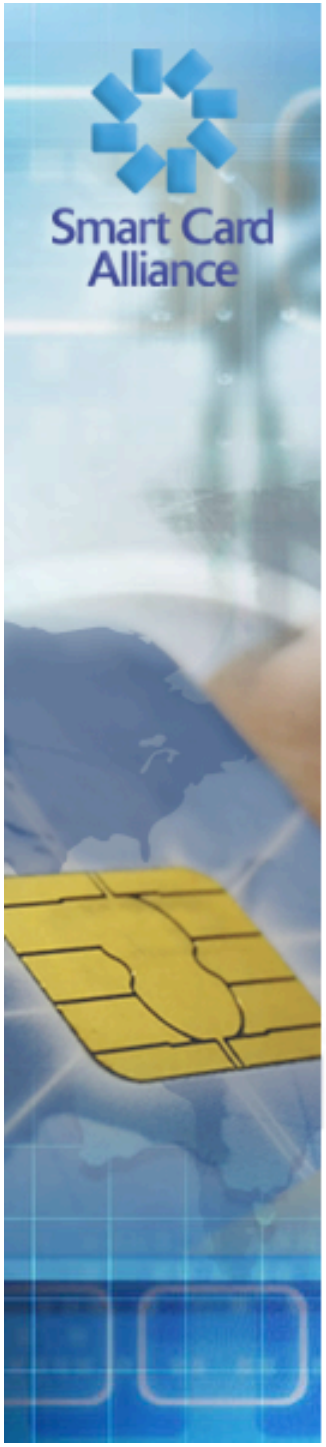
Study Overview

The study captures survey responses as well as thoughts shared during interviews and follow-up conversations.

Example of Actual Issuer Survey Question and Response



"Reduction in fraud by replacing the magnetic stripe card with a chip card easily justified our required investment to migrate to EMV…we consider it [the migration to EMV/chip] a suitable decision."



Study Overview

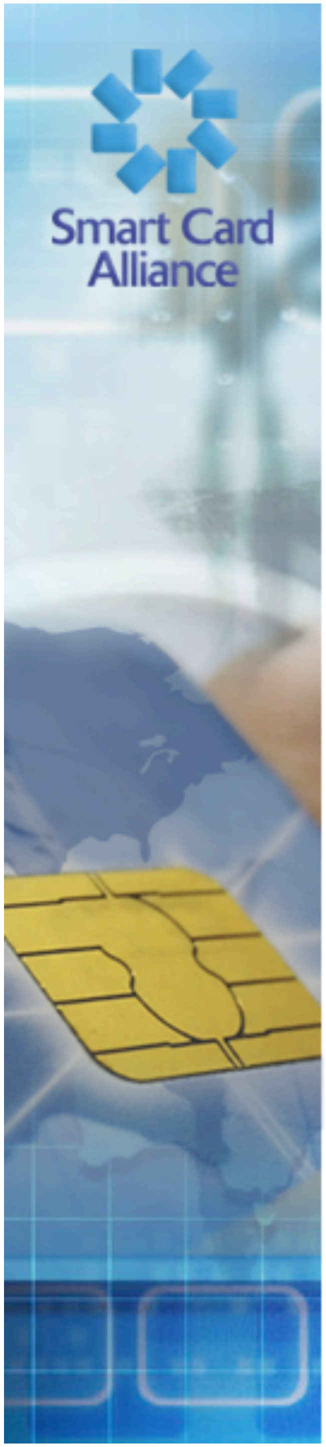
The survey explores key themes and issues in the EMV/chip market in Latin America.

Example

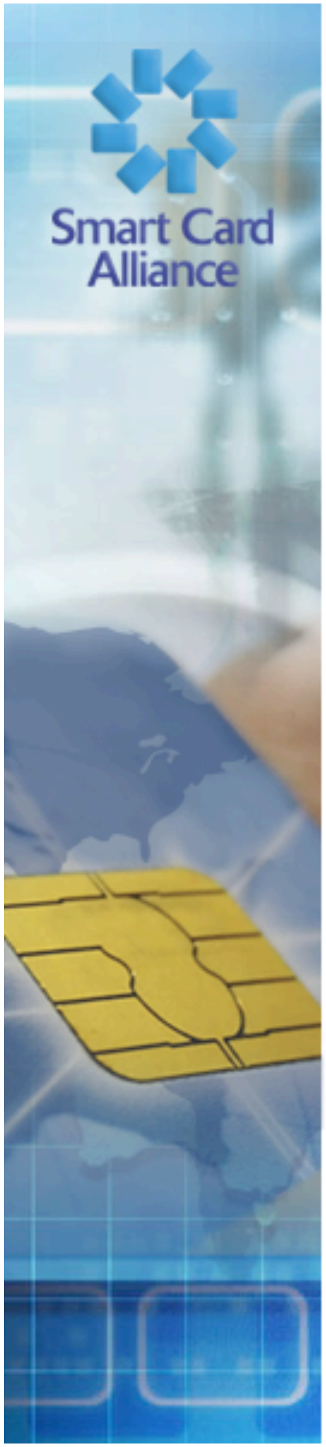
[Fraud as an Adoption Driver]

Survey respondents highlighted a few key reasons why fraud played a significant role in the business decision:

- Relatively simple to quantify the impact of EMV/chip card adoption on reducing fraud.
- Ability to cite real-world case studies (e.g., fraud reduction examples from European issuers' experience with EMV/chip card migrations).
- Challenges associated with quantifying non-fraud related benefits.
- Lack of a proven revenue generation model leveraging EMV/chip's multi-application capabilities.



Key Findings



Key Findings

Survey responses were analyzed based on their impact to key migration themes across a number of key areas.

Excerpts of Key Findings

Adoption Drivers	Fraud reduction overwhelmingly drove the business case for EMV/chip card adoption at most financial institutions.
Implementation	Most participants in the survey appeared to emphasize operational considerations in the move to EMV/Chip and are only now assessing commercial, value-enhancing opportunities like loyalty programs.
Migration Strategies	Most survey participants prioritized their credit card portfolios for migration given the potential for higher fraud risk and credit exposure.
Business Impact	Almost all survey respondents claim a marked reduction in overall fraud rates, particularly with domestic counterfeit fraud.
Evolution	Many survey respondents acknowledged that there is an opportunity to leverage offline transactions to decrease processing times and costs and to enhance the EMV/chip card functionality at the POS.

Brazil

Market Forecast

Brazil has the largest payments card market in the region.

2008

Country Profile

- Population (MM): 192
- Nominal GDP (trillion): $2.9 R ($1.2 US)
- Nominal GDP per Capita: $15,061 R ($6,432 US)
- GDP Growth: 5.3%

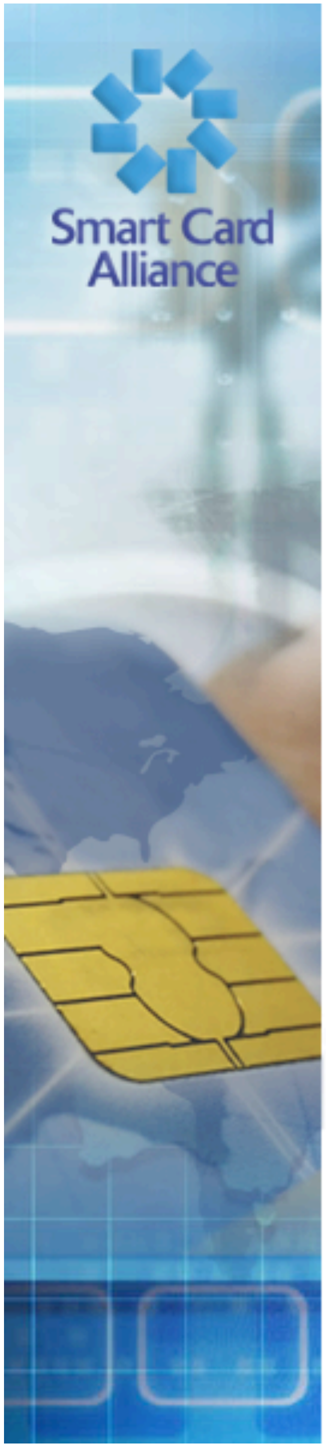
Payments Industry

- Card Volume (B) : $323 R ($138 US)
- Card Transactions (MM): 4,300
- Number of Cards (MM): 341
- Number of Terminals: 2,046,000
- Average Ticket: $97.8 R credit ($42 US), $51.1 R debit ($21.8 US)

Unique Characteristics

- Five banks generate over 70% card volume
- Acquiring marketplace aligned by acceptance brand
- Payment of the purchase price in installments (*parcelados*) represents >50% of transaction volume on credit cards

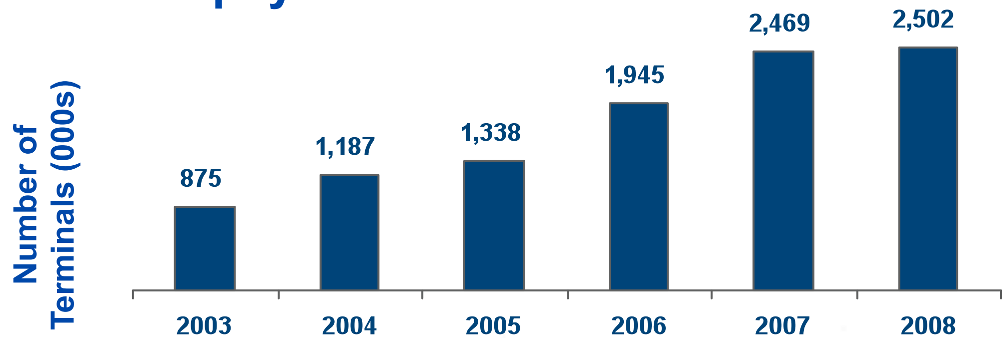
Note: Figures do not include private label cards.
Source: EIU; ABECS; Banco Central do Brasil



Brazil

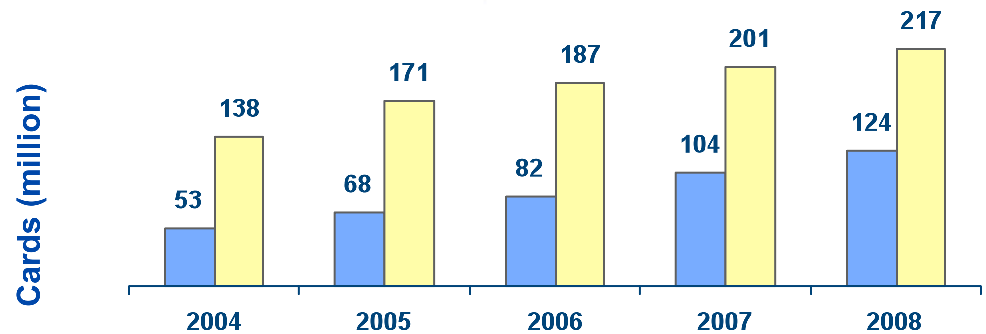
Market Forecast

The transition to EMV/chip follows a period of explosive growth for card-based payments in Brazil.



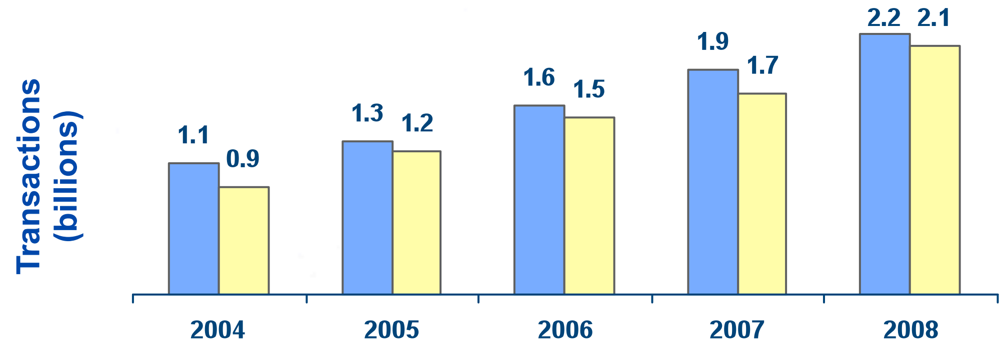
CAGR

Terminals	23%



CAGR

Credit	23.7%
Debit	12.0%

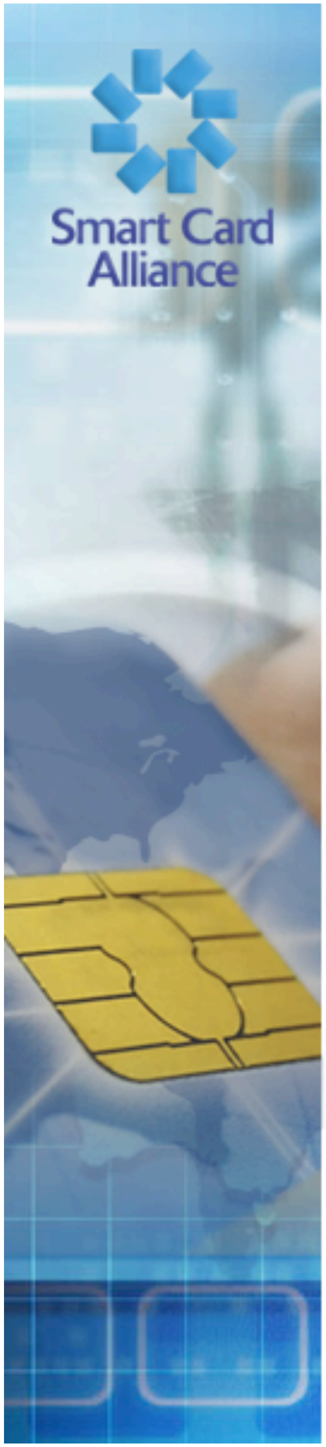


CAGR

Credit	18.9%
Debit	23.6%

Note: Figures do not include private label cards.

Source: ABECS; Banco Central do Brasil



Market Forecast

Brazil

It is estimated that Brazil has a significant penetration of credit card transactions processed as EMV/chip due to high terminal penetration and widespread card issuance.

2009 Forecast Summary

		2009F
Terminals *(000s)*	**EMV Compliant**	**2,715**
	% EMV Compliant	**95%**
Credit		
Cards *(millions)*	**EMV/Chip**	**86**
	% EMV/Chip	**60%**
Transactions *(millions)*	**EMV**	**1,366**
	% EMV	**60%**
Transaction Volume ($ B)	**EMV**	**$125R / ($73 US)**
	% EMV	**60%**
Debit		
Cards *(millions)*	**EMV/Chip**	**59**
	% EMV/Chip	**25%**
Transactions *(millions)*	**EMV**	**1,014**
	% EMV	**45%**
Transaction Volume ($ B)	**EMV**	**$48R / ($28 US)**
	% EMV	**45%**

Note: All EMV forecast projections are for domestic transactions only. Figures do not include private label cards. Currency conversions use exchange rate as of Oct. 2009 (.5837)

Smart Card Alliance

Mexico

Market Forecast

Mexico has the second largest payments market in Latin America.

2008

Country Profile

- Population (MM): 110
- Nominal GDP (trillion): $12.1 MXP ($.88 US)
- Nominal GDP per Capita: $110,136 MXP ($8,073 US)
- GDP Growth: 1.38%

Payments Industry

- Card Volume (B) : $511 MXP ($37 US)
- Card Transactions (MM): 801
- Number of Cards (MM): 82
- Number of Terminals: 446,025
- Average Ticket: $784 MXP ($57 US) credit, $501 MXP ($37 US) debit

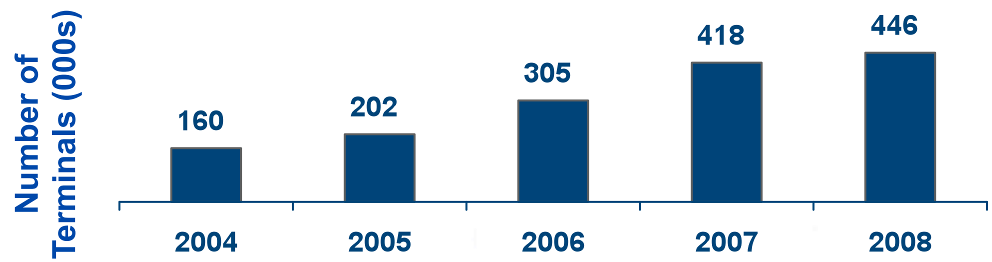
Unique Characteristics

- Top 5 banks account for 90% of total credit card receivables.

Note: Figures do not include private label cards.
Source: EIU; Banco de México

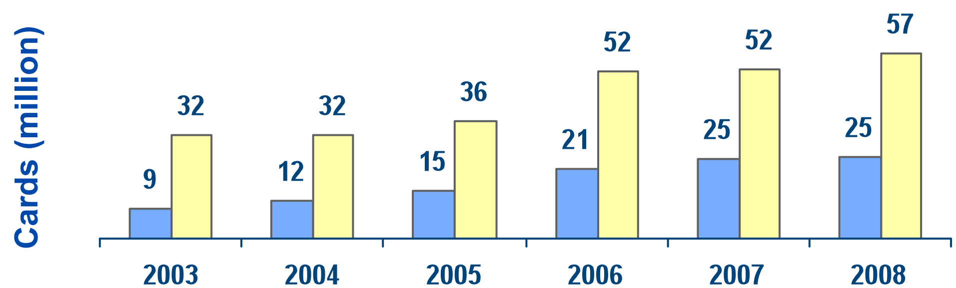
Market Forecast

Growth in electronic payments in Mexico has slowed after almost doubling in size from 2005 to 2008.



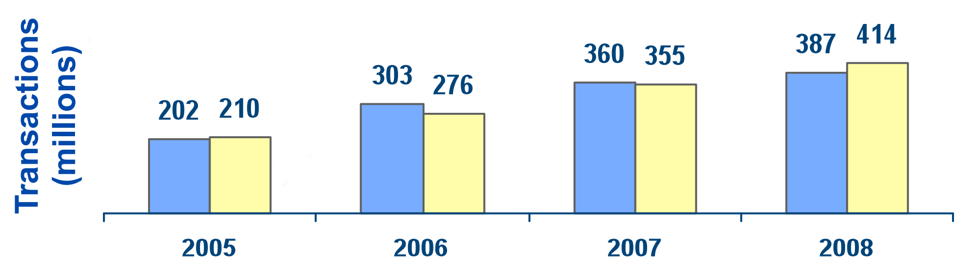
CAGR

Terminals	29.2%



CAGR

Credit	22.7%
Debit	12.2%



CAGR

Credit	24.2%
Debit	25.4%

Note: Figures do not include private label cards.

Source: Banco de México

Mexico

Market Forecast

A number of large supermarket chains and department stores with significant point of sale transaction volume have yet to upgrade to EMV-compliant terminals.

2009 Forecast Summary

		2009F
Terminals *(000s)*	EMV Compliant	379
	% EMV Compliant	80%
Credit		
Cards *(millions)*	EMV/Chip	14
	% EMV/Chip	65%
Transactions *(millions)*	EMV	178
	% EMV	50%
Transaction Volume ($ B)	EMV	$136 MXP / ($10 US)
	% EMV	50%
Debit		
Cards *(millions)*	EMV/Chip	3
	% EMV/Chip	5%
Transactions *(millions)*	EMV	12
	% EMV	2.5%
Transaction Volume ($ B)	EMV	$6 MXP / ($.5 US)
	% EMV	2.5%

Note: All EMV forecast projections are for domestic transactions only. Figures do not include private label cards. Currency conversions use exchange rate as of Oct. 2009 (.076)

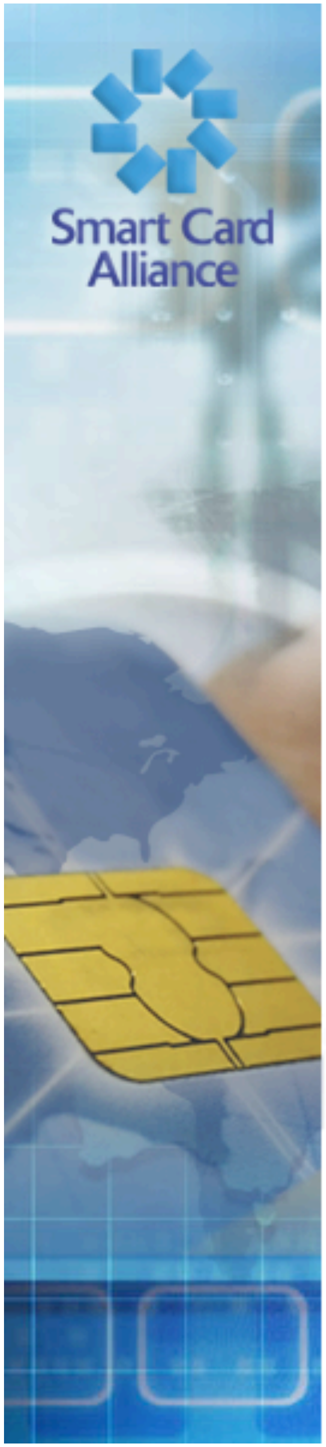


Table of Contents

Table of Contents

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How To Order

EMV Migration Study and Market Analysis on Mexico and Brazil

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