Mastercard
Changing the way the world makes payments

2019 North Carolina OSC eCommerce Conference
Joe Helmy, Director of Emerging Verticals Practice

According to industry legend,

the idea of payment cards was inspired at a dinner in New York, when the host was short of cash and unable to settle the bill.
MasterCard has evolved to become a driving force in the payments industry, transforming how the world pays and gets paid.

Mastercard Milestones

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<tr>
<td>1966</td>
<td>1979</td>
<td>MasterCard is the first payment card issued in the People’s Republic of China, and the first to introduce a laser hologram on cards.</td>
<td>In partnership with EuroPay International, MasterCard launches Maestro, the world’s first global online debit program.</td>
<td>2001 MasterCard Advisors is launched.</td>
<td>2008-2012 Keenly focused on driving innovation, MasterCard acquires Orbiscom, DataCash, the prepaid program and management business of Travelex (Access Prepaid), Trevico and Truaxis.</td>
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<td>1968</td>
<td>Financial institutions from Mexico, Japan, and Europe join ICA.</td>
<td>1979 Master Charge becomes MasterCard.</td>
<td>1997 MasterCard launches Priceless® campaign.</td>
<td>2006 MasterCard transitions to a new corporate governance and ownership structure and begins trading on the NYSE under ticker symbol MA.</td>
<td>2015 MasterCard acquires Applied Predictive Technologies and assists with the launch of Samsung Pay.</td>
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<td>1969</td>
<td>ICA acquires the Master Charge name and interlocking circles trademark.</td>
<td>1980s</td>
<td>1990s</td>
<td>2000s</td>
<td>2010s</td>
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Our Vision
A WORLD BEYOND CASH™

From major cities to emerging markets, we are stimulating economies and changing the way the world does business.

Our Mission

Every day, everywhere, we use our technology and expertise to make payments safe, simple and smart.
The Advantage We Deliver

- Unified global organization
- Fastest global processing platform
- Powerful brands and Priceless offers
- Innovative payment solutions
- Security expertise
- Strong relationships
- Unique advisory capabilities
- Talented employees
Payments Innovation

Our innovations support opportunities for new payment services and safer, seamless and more convenient payment experiences.

Consumer Data and Insights

By combining reliable transaction data with analytics, we offer unparalleled global consulting advice that can drive revenue growth, marketing efficiencies and business optimization.

Advisors does not sell the transaction data, but instead maximizes aggregated, anonymous data to deliver actionable insights.
Global Recognition

- #6 of Top 25 Blue Ribbon Companies
- #11 of Top 50 Change the World Companies
- World’s Most Admired Companies
- #5 of World’s Top 50 Business Leaders (Ajay Banga)

Innovation Project®
PYMNTS Innovator Award for Best New Technology

Millward Brown
#20 of BrandZ Top 100 Most Valuable Global Brands

Forbes
#36 World’s Most Innovative Companies

Barron’s
#8 of Top 100 World’s Most Respected Companies

Harvard Business Review
Best-Performing CEOs of the World

Ethisphere
World’s Most Ethical Companies (2016)

All recognition awarded in 2015 unless stated otherwise.

Workplace and Diversity Recognition

- Human Rights Campaign
  Best Places to Work

- DiversityInc.
  #7 of Top 50 Companies for Diversity (2016)

- ComputerWorld
  #1 of 10 Best Finance Companies to work for in the U.S.

- LinkedIn
  The World’s 100 Most In Demand Employers (2014)

- National Association for Female Executives
  Top Companies for Women

- Working Mother
  100 Best Companies

- Hispanic Network Magazine
  Best Places to Work

All recognition awarded in 2015 unless stated otherwise.
MasterCard's highly regarded Priceless campaign crosses borders and cultures and connects people to priceless possibilities.
Our Strategy

Mastercard’s growth is influenced by four primary factors:

- Personal consumption expenditure growth
- Shift to electronic forms of payment from cash and check transactions
- Mastercard share of electronic payments
- Value-added products and services
Key Trends

- Financial inclusion
- Continued urbanization
- Growing importance of youth
- Growing affluent and middle class
- Ubiquity and reliance on smartphones
- Growth of e-commerce and omni-channel shopping
- Growth of digital payments
- Consumer concerns about fraud

Our Strategy

Our strategy is to grow our share of commerce through innovation and execution. We drive our strategy by growing our core businesses, diversifying geographies and customers, and building new businesses.
Mastercard Advisors

Our global consultancy provides clients with insights and solutions that drive business impact and ROI.

With analyses based on more than 80 billion anonymous transactions, Advisors leverages aggregated information and a consultative approach to help financial institutions, merchants, media companies, governments and other organizations grow their businesses.

Other Value-Added Services

Prepaid Management Services — end-to-end global prepaid card programs for large or small companies that are backed by our safety, security and global acceptance

Payment Transaction Services — acting as a fully integrated technology partner to issuers and acquirers, we provide the back-end technology, service and support needed to make payments happen

Payment Gateway Services — delivering new and different ways to pay online and provide merchants with truly global connectivity
Mastercard Labs

Supporting **breakthrough innovation** efforts is at the heart of differentiating MasterCard from our competitors and key to sustaining our competitive advantage in the marketplace.

**Our strategy – enable our customers and partners to be at the forefront of digital payments**

Delivering the **best digital experience** everywhere  
Securing every transaction  
Digitizing all forms of personal and business payments  
Simplifying access to, and integration of, our digital assets  
Identifying and experimenting with future technologies, start-ups & trends
Scale services
Driving core product differentiation and incremental revenues

Advisors
Over 50% of customers use our project-based consulting services

Data & Analytics
Over 60% of customers use our data & analytics solutions

Fraud Solutions
Almost half of transactions benefit from our optional fraud scoring solutions (a 50% increase over last year)

Loyalty
65+ million accounts managed on our loyalty platform

Processing
Enabling digital payment and IoT strategies for merchants

Labs as a Service
30+ customer Launchpad events since January 2016

Meeting Expectations in a Digital-First World
New technology and changing trends are complicating how businesses operate to meet consumer expectations

- Industries being reinvented
- Lines blurring between physical and digital
- IoT/Wearables
- Personalization
- Growth of the shared and on-demand economy
- Everyone and everything is becoming connected

Technology is also pushing security and experience to be one and the same

You can no longer choose between a great customer experience and great security

Mastercard believes that experience should be designed to be secure, and security designed to be seamless
Build stronger relationships with all of your customers by making a completely connected experience that is secure and seamless

**SECURE**

Every fraud decision invisible, data driven, and intelligent

**SEAMLESS**

Every transaction simple for all of your customers and flows

Giving customers the choice to pay securely anytime and from any device

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**SECURE SOLUTIONS**

Using data and artificial intelligence to approve more legitimate transactions and eliminate friction from the cardholder experience

**NuDetect**
Aggregated behavioral intelligence using machine learning and billions of data points to provide pinpoint accuracy in distinguishing genuine from fraudulent user behavior

**Mastercard ID Check**
A set of rules and standards that are designed to ensure a consistent consumer experience for 3D-Secure authorization via mobile devices and in app payments.

**Assurance IQ**
Consolidated and normalized consumer account and device data to provide a level of assurance that the consumer’s attributes are genuine without increasing risk

Authentication | Authorization

Secure every transaction with a data driven, layered strategy
SEAMLESS SOLUTIONS

Making every transaction simple for consumers no matter how or where they choose to pay

- **Automatic Billing Updater (ABU)**
  Updates and delivers PAN level details on stored accounts to help reduce preventable declines and provides uninterrupted service.

- **MDES for Merchants (M4M)**
  Updates and delivers tokens to substitute for PANs over time and help reduce fraud while providing uninterrupted service.

- **Masterpass by Mastercard**
  Expand your digital acceptance footprint with a simple, secure and more trusted way to process payments across channels.

Automatic Credential Management for Card on File | Omni-channel Checkout

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REASON TO ACT

Mastercard digital solutions give you the tools you need to stay ahead in the age of digital commerce

- **Automatic Billing Updater (ABU)**
- **MDES for Merchants**
- **NuDetect**
- **Mastercard ID Check**
- **Assurance IQ**
- **Masterpass**

Credential Management | Authentication | Authorization | Omni-channel Checkout

Intelligent security converged with a seamless customer experience from start to finish.
MDES for Merchants

Building a more seamless and secure lifecycle management solution with Mastercard Digital Enablement Service and Automatic Billing Updater.

Tokenized payments will continue to grow at a rapid rate, but card-on-file payment types will be mixed for some time.

$2.25B

token market size by 2020

22.5B

IoT devices by 2020

CONSUMER PAIN POINTS

And while consumers like the convenience of card-on-file, the fear of security breaches still looms large.

- 55% say they are at least somewhat concerned about security of their saved cards²
- 81% have been a victim of data breaches, identity theft or credit card fraud²
- 1 in 3

2. Glenbrook research for Consumer Control

MERCHANT PAIN POINTS

High security without a seamless experience can negatively impact revenue.

- Digital fraud rate is higher than POS
- Leading to unnecessary false declines
- Which cost the bottom line

- 3x higher than POS¹
- 13x the amount of actual fraud²
- 66% Reduced or stopped shopping with that retailer after a false decline²

1. Source: Mastercard Data Warehouse, Q1-Q3 2016, Global
**REASON TO ACT**

False declines are diverting resources and undermining the merchant’s ability to effectively combat fraud.

US ecommerce merchants:

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<th>Spend</th>
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<td>$8.6B</td>
<td>7.6%</td>
<td>$172</td>
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- Lose: $8.6B in falsely declined transactions\(^3\)
- Spend: 7.6% of retailer revenue fighting fraud on average\(^2\)
- Spend: $172 per account following a breach\(^1\)

1. Source: EMS Fraud Scoring savings model. Data based on Mastercard transactions only; overall market results may vary by Institute June 2016

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**POSITIONING**

M4M and ABU together provide seamless and secure lifecycle management of PANs and Tokens.

- Reduces preventable PAN declines on stored accounts caused by changed account numbers, expiration dates, and more.
- **Automatic Billing Updater**
  - Automatic updates to PANs for a seamless experience.
- **MDES for Merchants**
  - Automatic updates with a layer of enhanced security.
- Provides network tokenization of card-on-file credentials and seamless updates to the funding PANs.

Future ready, today: seamless account updates for PANs, tokens or a mix of both.

**Simplicity**
Lifecycle management across the entire Mastercard network – PANs and tokens

**Reliability**
Regardless of commerce platform, COF management is secure and reliable

**Scale**
Token and PAN updates at tiered volumes with one network

HOW IT WORKS: M4M

Network tokenization offers a new level of security, transparency and potential benefit

**M4M Tokenization (direct integration with merchant)**

1. Token ensures merchant has most current account details
2. A cryptogram is validated on each original purchase transaction to help improve security over non-network tokens
3. Issuer ability to recognize network-level tokens helps improve approval rates versus non-network tokens that are treated as standard CNP transactions
4. Updated account details sent to MDES via ABU
My Digital Life Introduction

Establishing the Digital Foundation for New Services
April 2019

Digital Identity is Foundational To Native Digital-First Services

Trends Accelerating Digital Identity Need

- Best Practice Bar Raised for Security and ID&V
- User Expectations: Simple, Secure, Private
- Connected Devices & Complexity
- GDPR+ Regulations Globally
- User for Open Banking, Open Data
- AI Drivers to New User Services
- Urbanization and Smarter Cities
- 7.5B User Relevance: Inclusion Markets
- Embedded Digital Commerce Growth
- Drivers to User Centric, Distributed Systems
What is Digital Identity?

- Digital Identity = The collage of data verified by trusted parties and that is a digital means of establishing ‘we are who we say we are’ with a high degree of assurance (i.e. proves “John is John with X% accuracy”)

- Reusable Digital Identity allows individuals to identify themselves to gain access to multiple services with speed, convenience, and security – based upon verification of both static and dynamic identity data

### Inherent characteristics
- Date of birth
- Gender
- Biometrics
- ….

### Assigned attributes
- Name
- Social Security #
- Passport #
- Employer ID
- …

### Acquired Attributes
- Address
- Purchase History
- Device Location
- Device Attributes
- …

### Individual Preferences
- Favorite Brands
- Taste in Music
- Interests
- …

Compelling Value Proposition with a Reusable Digital Identity

For **Users**:
- Easy user experience with 1 time enrollment
- Secure, No Password use of tokens for authentication
- Ubiquitous acceptance, high value, high frequency use-cases
- Consumer control over data: ID, consents, digital footprint, data
- End point device flexibility across all life-stages and situations

For **Customers**:
- Broadly adopted, high assurance user digital identity
- Fast, resilient, on-demand; supporting data minimization
- Efficient, Transparent, Globally Interoperable
- Flexible levels of identity verification (dynamic, biometric)
- Extensible and adaptable service to plug-in
An Efficient User Centric Digital Identity System Model

Identity Verifiers
- Verifies identity attributes
- Goal is system efficiency
- GOV, Bank, MNO, Post, etc.
- Could be aggregators & others

Trust Provider (TP)
- User Relationship
- Distribution of Service
- ID Verification Role
- Bank, MNO, Device OEM, other

Digital Identity (DI) Service

Mastercard Role:
- Market Organizer & DI Network Service
- Standards & Interfaces
- Assurance Policy for ID Verification
- ID Fraud Signal Sharing
- Business, Economics, Governance
- No PII or Database

Relying Party (RP)
- Relies upon verified Digital ID
- Customer of the DI Service
- Multi-Vertical Market Services

User
- ID Data, Documents, Devices, Cards

“As a user champion, provide simple & secure digital identity services for users interacting with application services across multiple verticals (payment, non-payment) and countries that enable them to be known with assurance, in a manner sensitive to their privacy and data rights.”

Mastercard Perspective
See digital identity vision paper: mastercard.com/digitalidentity

Vision

Our Role
- Orchestrating digital interactions as a user champion
- Establish the service platform, network
- Define the operating rules & governance
- Deliver and operate the service with partners
- Attract and service customers

Our Relevance
- Global footprint across over 200 country markets
- 23,000 bank partners; 50 million merchant relationships
- Experience in governance and operating networks
- Commitment to invest in a global infrastructure
- Evolution of digital payment interactions

Broad Market Collaboration Essential

- Primary ID Verification: Bank, GOV, MNO, Post, ...
- Government Alignment
- Bank Partnerships: Trust Provider, ID Verification
- Focus upon core natural industry roles
Compelling Use Cases – Supporting My Digital Life

...Simple, Transparent, Safe, Fast

- **Digital Front Door**
  - Hi, it's Me!

- **Seamless Travel**
- **Verify Age, Address, Rights**
- **Background Checks**

- **Click Enroll & KYC**

- **Digital Payment**

- **High Assurance ID&V**
  - Payment/DI Interconnect
  - Digital Issuance

- **Sharing Economy**
- **Income Verification**

- **Remote, F2F Store entry**
  - Personalized Engagement
  - 1 Click, Secure

- **Airline, Hotel, Car**
  - Remote Services
  - F2F Services

- **Age-Related Sales**
  - Retail (Remote, F2F)
  - Ship High Value Goods
  - Entitlements

- **Apply: Credit, Loan, Account**
  - Financial, Health, Gov
  - Student, Gaming, others

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