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THE STRAWHECKER GROUP



# TSG eReport: Payments Industry 101

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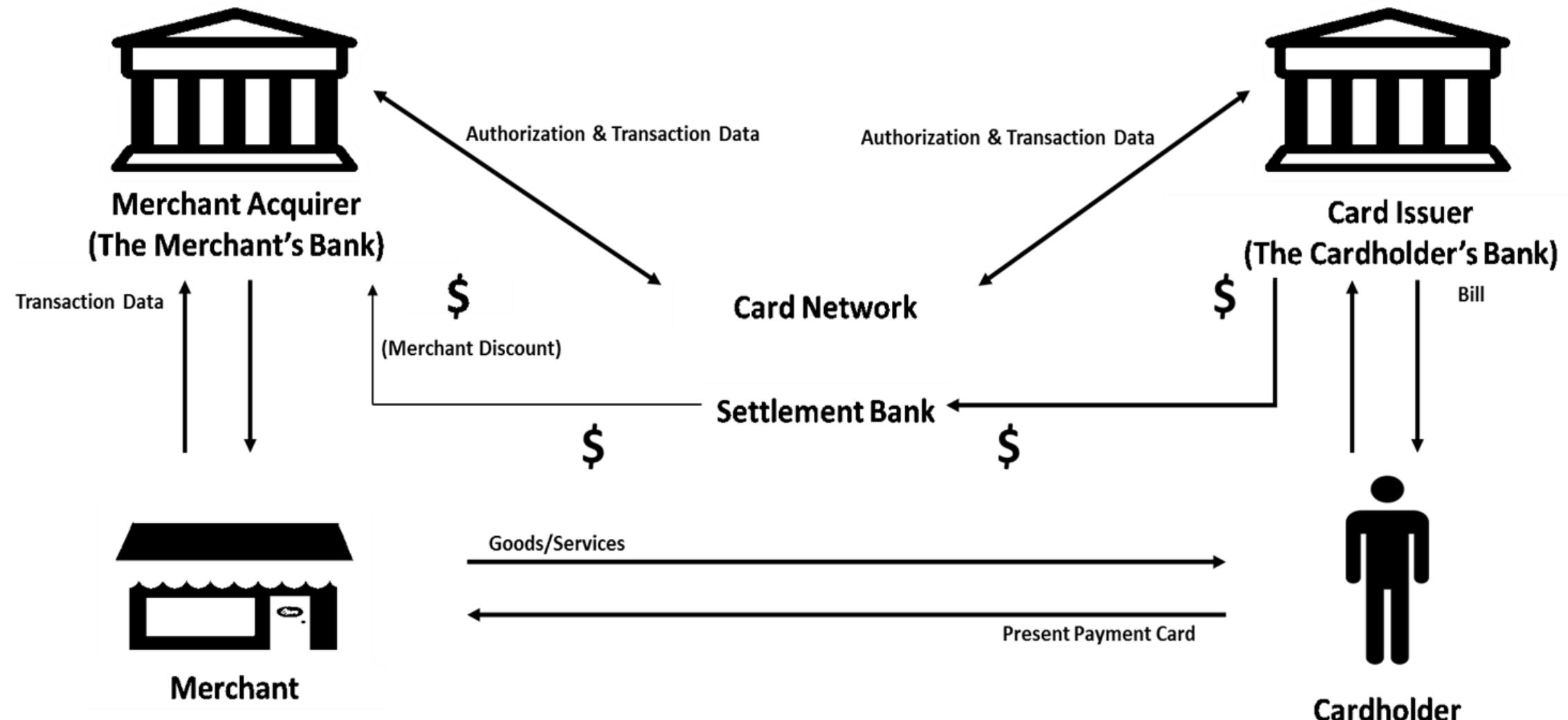
# Payments Industry Primer

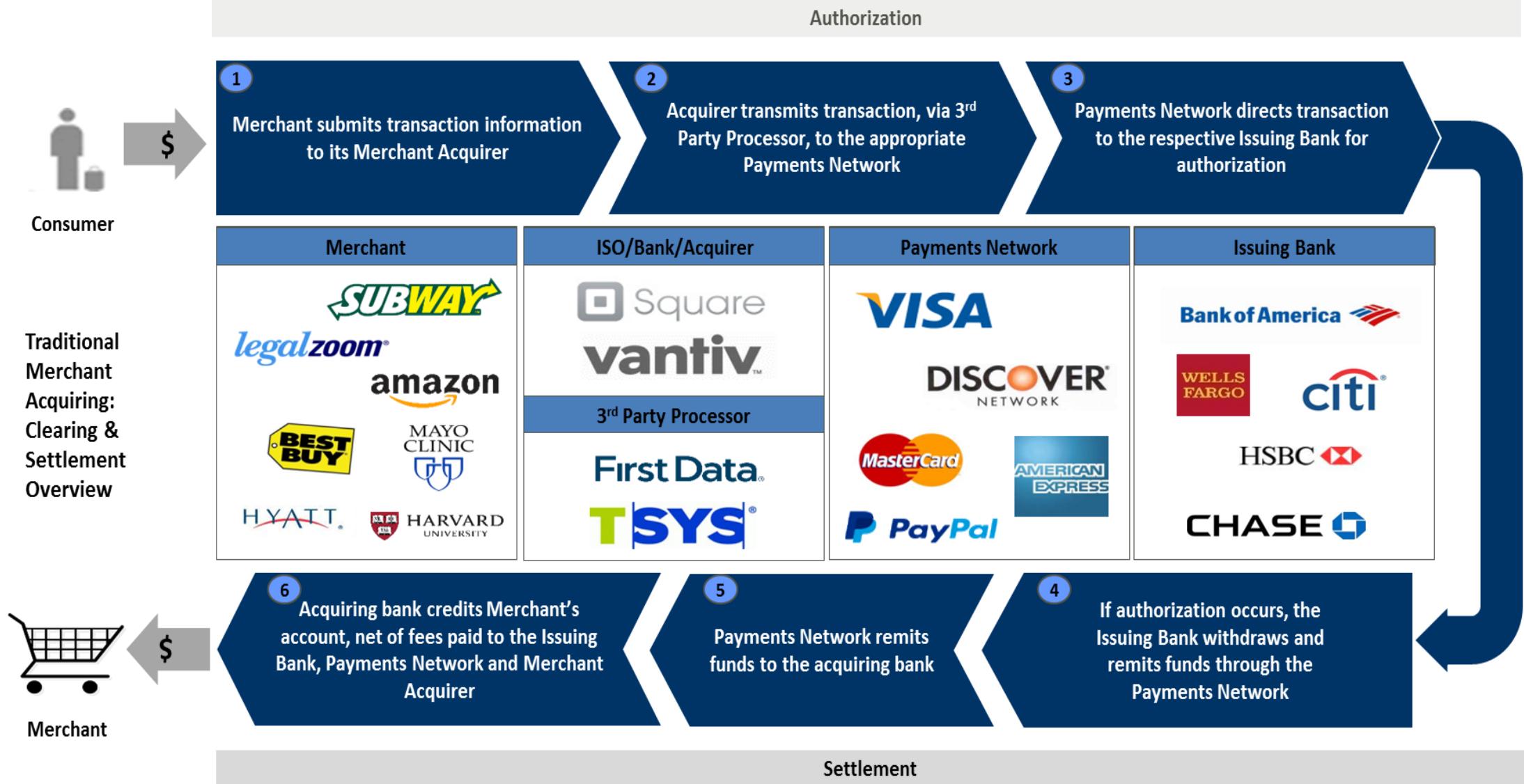


## Key Merchant Acquiring Definitions

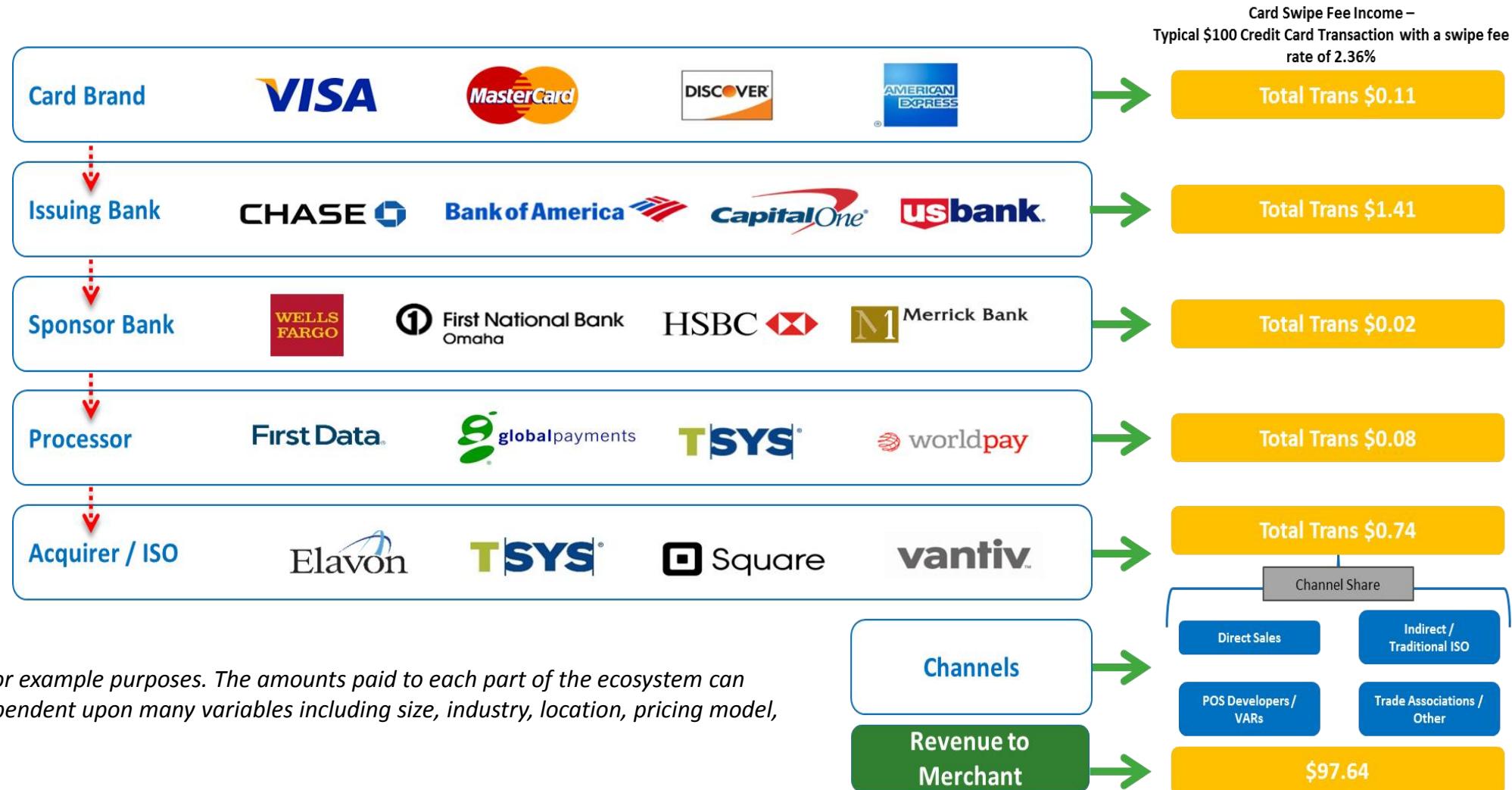
1. **Issuer** - A financial institution or other entity that issued the Credit Card or Debit Card to the Cardholder
2. **Acquirer** - Financial institution or other entity that enrolls merchant for the purpose of presenting transaction to the Card Associations, and funding merchants for transactions presented to the Acquirer
3. **Consumer** - Any individual who possesses or uses a Payment Device
4. **Merchant** - Entity identified on or under a processing agreement permitted to submit payment to Acquirer
5. **Authorization** - The approval of credit worthiness of the transaction
6. **Settlement** - The closing of credit card batches and the start of the movement of funding to a Merchant.
7. **Interchange** - The clearing and settlement system for the card networks, where data is exchanged between Acquirer and the Issuer through the applicable network
  - a. **Interchange Costs:**
    1. Managed and updated by the Card Networks
    2. Interchange costs vary in amount based on:
      - a. Industry type
      - b. Manner which cards are authorized
      - c. Timeliness of settling batch for payment
      - d. Additional Data provided at the Point of Sale
      - e. Card Product (*Consumer, Check Card, Commercial/Corporate, Rewards*)

In an electronic payment transaction, the payment flow has two sides: the acquiring side, and the issuing side



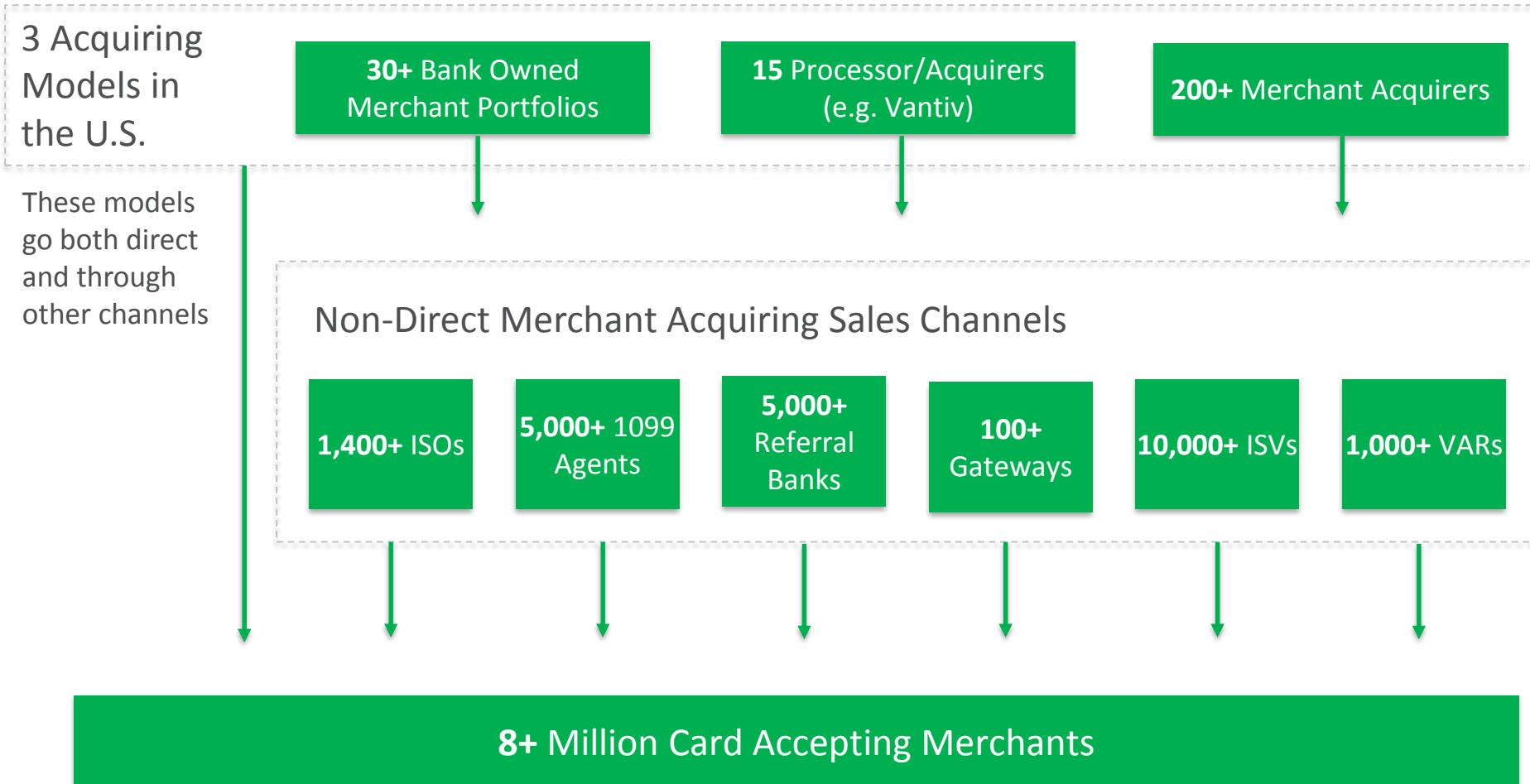


The following chart illustrates the economics of a \$100 card transaction and the estimated revenue to each player in the value chain. Note that many of these companies play multiple roles in the ecosystem





The 8 million card accepting merchants in the U.S. have been sold merchant processing from over 20,000 different channels





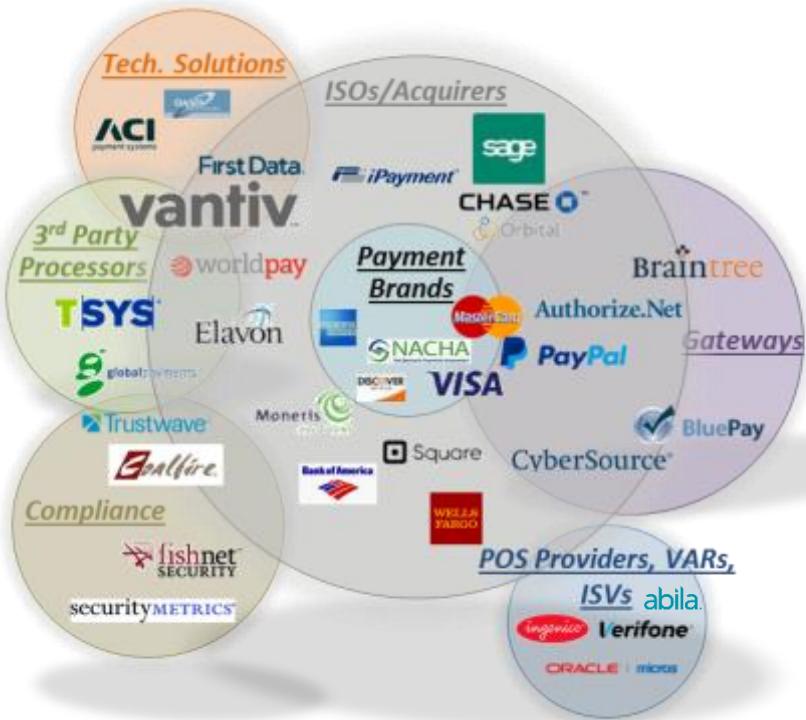
Many players in the payments industry offer various third-party services in the industry. Below includes of these major players that illustrate the varying product offerings. One checkmark identifies vendor offering, two checkmarks represents segment leadership

Service	Discover	Elan/Elavon	First Data	Fiserv	FIS	Mastercard	TSYS/ TransFirst	Vantiv	Visa
Debit Processing	✓	✓	✓✓	✓	✓	✓	✓	✓	✓
Fraud Detection	✓	✓	✓	✓	✓	✓	✓	✓	✓
Prepaid Card Processing		✓	✓	✓	✓✓	✓	✓✓	✓	✓
Card Fulfillment		✓	✓✓	✓	✓		✓	✓	
Call Center/IVR	✓	✓	✓	✓	✓		✓	✓	
ATM Terminal Driving	✓	✓	✓	✓	✓	✓		✓	✓
Merchant Acquiring Services		✓	✓✓		✓		✓✓	✓✓	
Core Processing				✓✓	✓✓				
Consumer Card Issuing		✓	✓✓	✓	✓		✓✓	✓	
Commercial Card Processing		✓	✓✓	✓	✓		✓✓	✓	
2 <sup>nd</sup> PIN Network	✓		✓	✓	✓	✓		✓	✓✓
Network/Brand	✓					✓			✓

These Charts Shows The **Blurred Lines** Between Competitors And Partners, Primarily Driven By The Digital Payments Evolution

The effect of new technology players have created an ecosystem where overlapping relationships have resulted in a **more complex marketplace** making it **difficult to provide that seamless, frictionless payments environment across all channels**

## The Merchant Acquiring Ecosystem



## The eCommerce Gateway Ecosystem



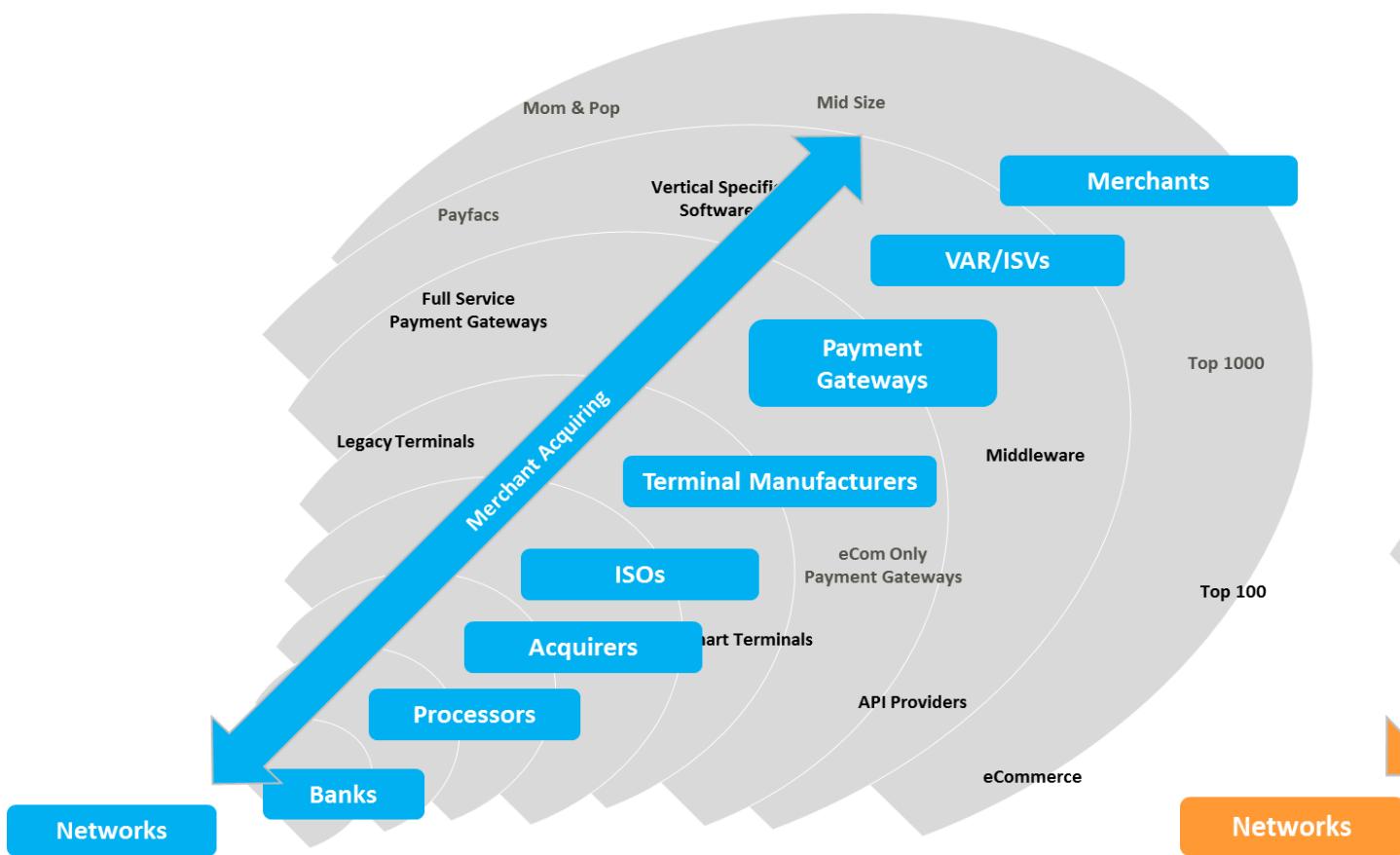
## The mCommerce Gateway Ecosystem



Company logos placed in predominate business

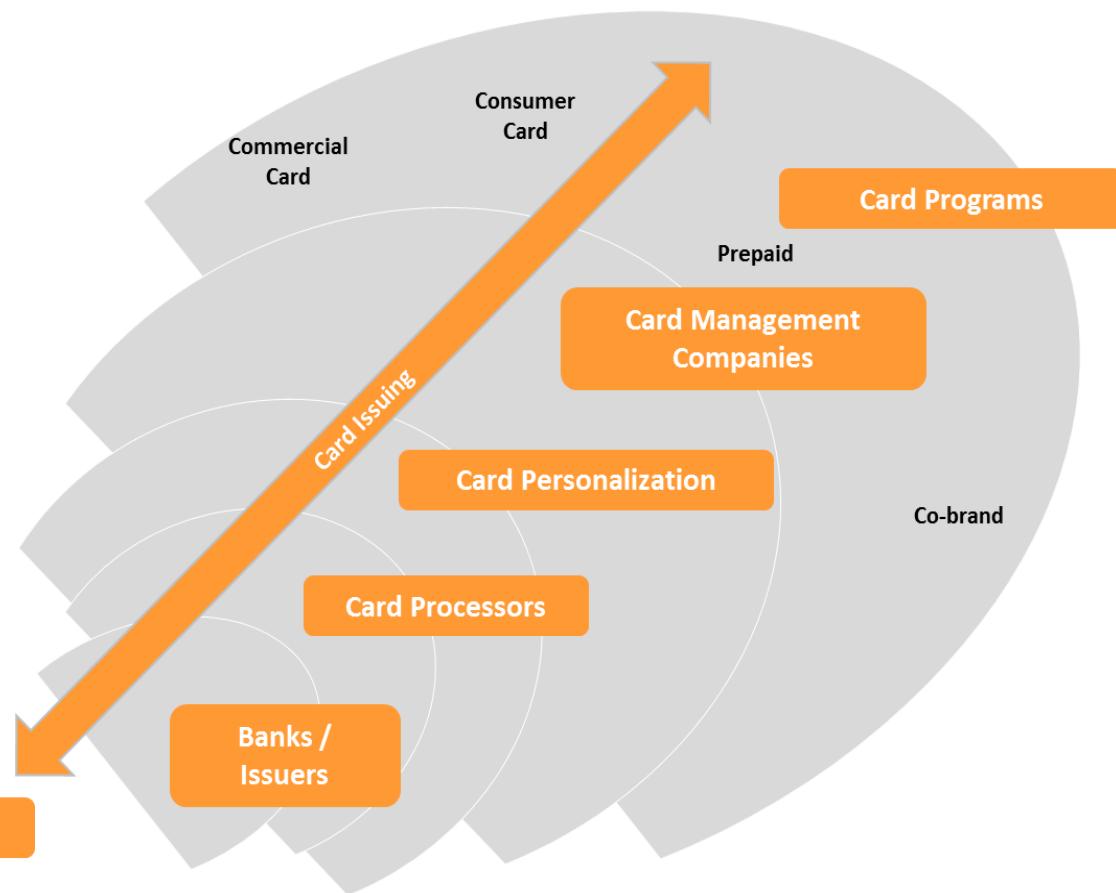
*When it comes to transaction flow, there are many company types on the merchant acquiring side of the transaction.*

**The characteristics of a merchant (Top 100 versus Mom & Pop) determine the number of layers between it and the card networks**



*When it comes to transaction flow, there are many company types on the issuing side of the transaction.*

**Some companies hold multiple roles in card issuance, from issuing the credit to mailing the statements to consumers**





The top ten U.S. merchant acquirers' market share reached its highest point in 2005 and has since leveled off at ~80% of dollar volume

## Evolution of the Top 10 U.S. Acquirers – Est. Bank Card \$ Volume Market Share (1997 – 2016)

1997			2005			2015			2016		
Company	Volume (\$M's)	Share %	Company	Volume (\$M's)	Share %	Company	Volume (\$M's)	Share %	Company	Volume (\$B's)	Share %
Chase Manhattan	95,000	16%	Chase Payment Sol.	477,000	28%	Chase Commerce Solutions	\$667,000	17%	Chase Commerce Solutions	\$1,000	19%
National Processing Co.	75,000	12%	BA Merchant Services	270,000	16%	Bank of America Merchant Services	\$560,000	14%	First Data	\$770	14%
First Data Corp (NB)	65,000	11%	First Data	228,000	15%	First Data	\$468,000	12%	Bank of America Merchant Services	\$730	14%
Paymentech (NB)	46,000	8%	NOVA Information Systems	130,000	8%	Vantiv	\$400,000	10%	Vantiv	\$550	10%
BA Merchant Services	29,000	5%	Fifth Third	115,000	7%	Elavon	\$269,000	7%	Elavon	\$320	6%
National Data Corp. (NB)	23,000	4%	Wells Fargo	68,000	4%	Wells Fargo Merchant Services	\$208,000	5%	Wells Fargo Merchant Services	\$275	5%
Fifth Third Bank	21,000	4%	Global Payments	56,000	3%	Citi Merchant Services	\$175,000	4%	Citi Merchant Services	\$200	4%
U.S. Bancorp	20,000	3%	Heartland Payments	34,000	2%	Global Payments	\$141,000	4%	Global Payments	\$200	4%
First of Omaha	17,000	3%	FNMS	34,000	2%	Heartland Payment Systems	\$112,000	3%	Heartland Payment Systems*	\$130	2%
Banc One	17,000	3%	iPayment	26,000	2%	Worldpay	\$97,000	2%	TSYS Merchant Solutions / TransFirst	\$120	2%
<b>Top 10 Acquirers</b>	<b>\$408,000</b>	<b>67%</b>	<b>Top 10 Acquirers</b>	<b>\$1,450,000</b>	<b>85%</b>	<b>Top 10 Acquirers</b>	<b>\$3,100,000</b>	<b>77%</b>	<b>Top 10 Acquirers</b>	<b>\$4,295,000</b>	<b>80%</b>

Note: Individual numbers/share may not sum due to rounding

\*Heartland Payment Systems was acquired by Global Payments in 2016

Source: The Strawhecker Group, Nilson Report

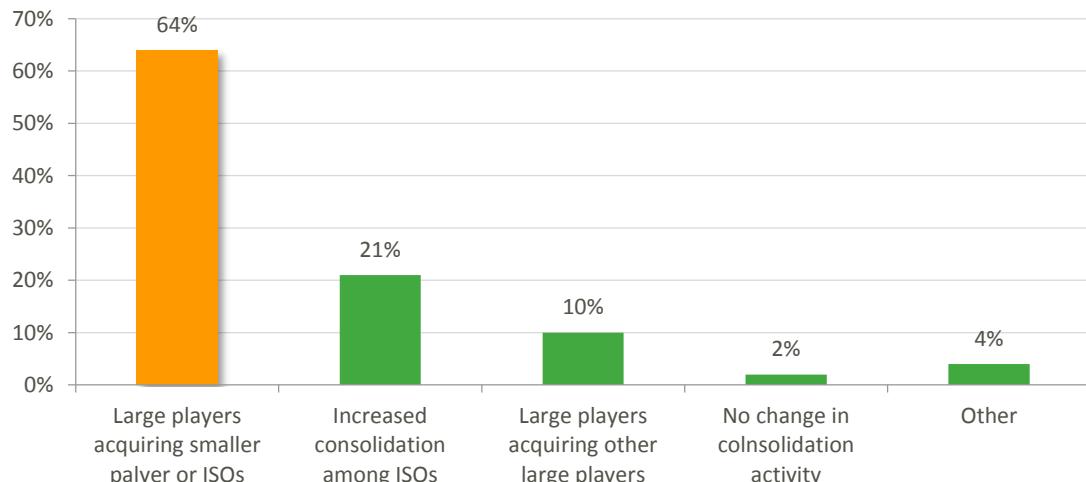


## Industry Consolidation Likely To Intensify Competitive Dynamics

- Most industry participants expect industry consolidation to continue over the next 2-3 years, with most expecting to see larger merchant acquirers acquire similar or smaller-sized acquirers and/or ISOs/ISVs in order to enhance scale and gain exposure to new market segments. The results are consistent with ongoing consolidation trends such as the recent TSYS/TransFirst and the Global Payments/Heartland Payments transactions.
- Larger-scale merchant acquirers will continue to emphasize gaining share in the SMB merchant segment, where they can maximize their competitive advantages owing to greater scale (given the high fixed costs and low marginal costs of maintaining a processing infrastructure) and pricing power (given their structural cost advantage) relative to smaller processors.

**How do you expect recent transactions by Global Payments and TSYS to impact your own business and the competitive dynamics in the market?**

**74% of respondents expect to see larger merchant acquirers acquire similar sized or smaller acquirers and/or ISOs**



**60% of respondents expect these players to gain market share or price more aggressively as a result of greater scale**





**There are various types of ISOs and sales distribution models in the merchant acquiring market – below are two examples of each**

	Characteristics	Examples	Specific Needs
<b>ISO Types</b>			
<b>Wholesale ISO</b>	Traditional broad product offering, feet on the street sales force. Provide own back-office services with direct processor and bank sponsorship relationship. Typically provides own risk-monitoring. May have some proprietary products. Typically owns the risk associated with merchant processing.	North American Bancard (NAB)	Sponsorship and robust set of à la carte processing options
<b>Retail ISO</b>	ISOs whose primary focus is sale of merchant accounts. They utilize a third-party for all back-office support including underwriting and customer service. Retail ISOs have no liability for merchant fraud and losses.	Payroc	New start up, revenue shared with contracted entity
<b>Distribution Model Examples</b>			
<b>Relationship/Agent Bank</b>	Sells through relationships with community banks and/or Associations. Typically provides own back-office services. Broad retail focused product offering.	Security Card Services	Sponsorship and robust set of à la carte processing options
<b>Integrated</b>	Markets through or in coordination with software partners. These software providers often serve specialized markets.	Vantiv Integrated Solutions, Card Connect	Same as above with Processor certified applications

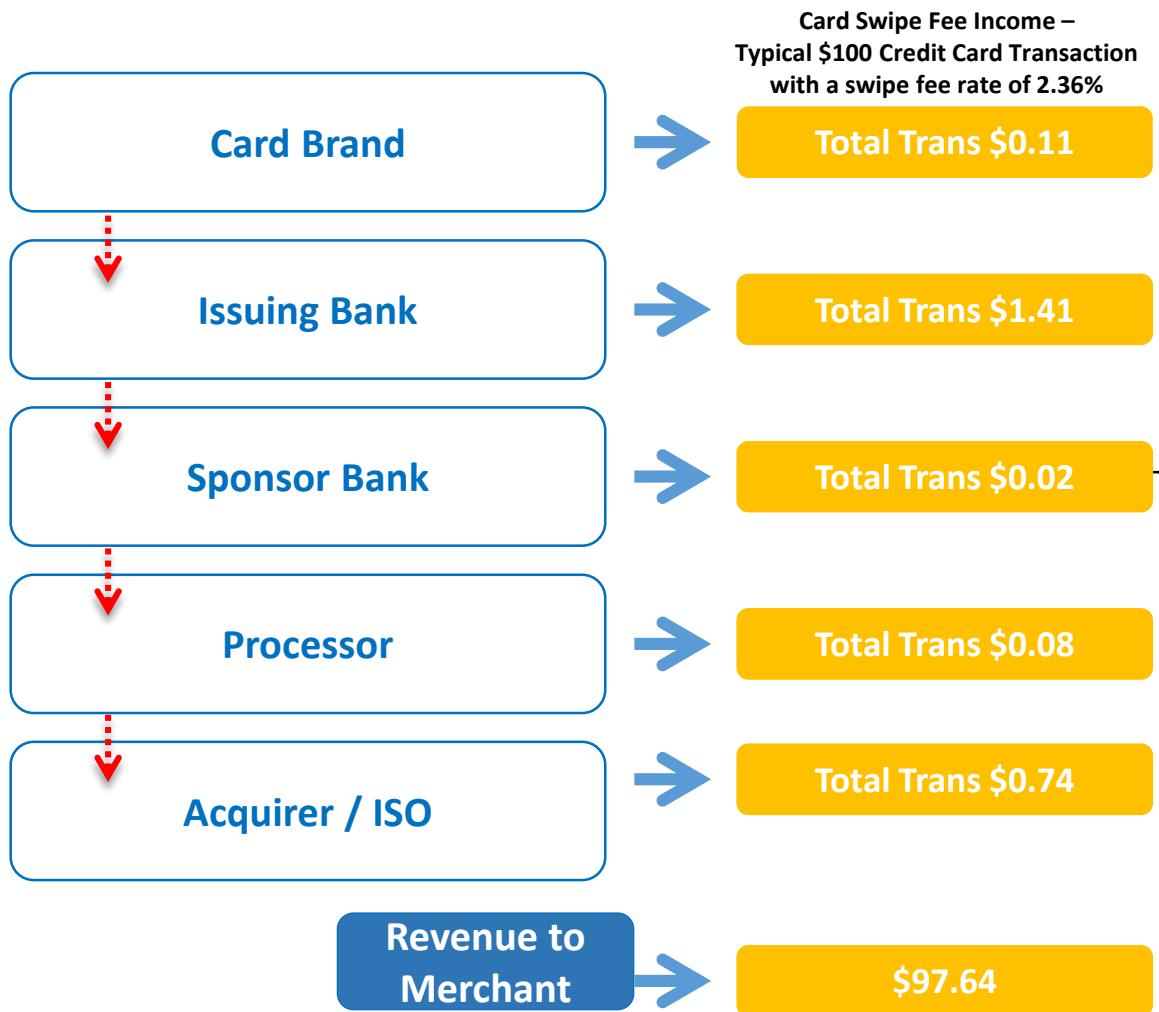


## Risks of the Payments Business

Merchant acquiring companies entering the payment space need to be aware of inherent risks and outside influences which may effect their programs. These risks include such things as data security breaches, an evolving regulatory landscape and internal processing protocol.

- **Regulatory risk (FTC – FDIC – OCC – CFPB – Card Brands)**
  - Maintain a structured compliance program
- **Reputational risk**
  - Maintain a strong due diligence process for accepting new merchants
- **Operational and transaction processing risk**
  - Maintain strong operational procedures/separation of duties
- **Strategic risk**
  - Establish consistent oversight by Sponsor Bank and ISO Senior Management
- **Chargeback and credit risk**
  - Maintain a strict underwriting and risk policy to help identify risky or potentially fraudulent merchants
- **High Risk merchant risk**
  - Understand and underwrite the merchant based on high risk parameters
- **PCI Intrusion risk**
  - Maintain and adhere to PCI DSS policies and procedures

The chart similar to this earlier focused on the players that are paid in the transaction flow. This breaks shows other bank issuing income.



In addition to transaction revenue, issuers receive income from other components of their card programs:

#### Other Issuing Income

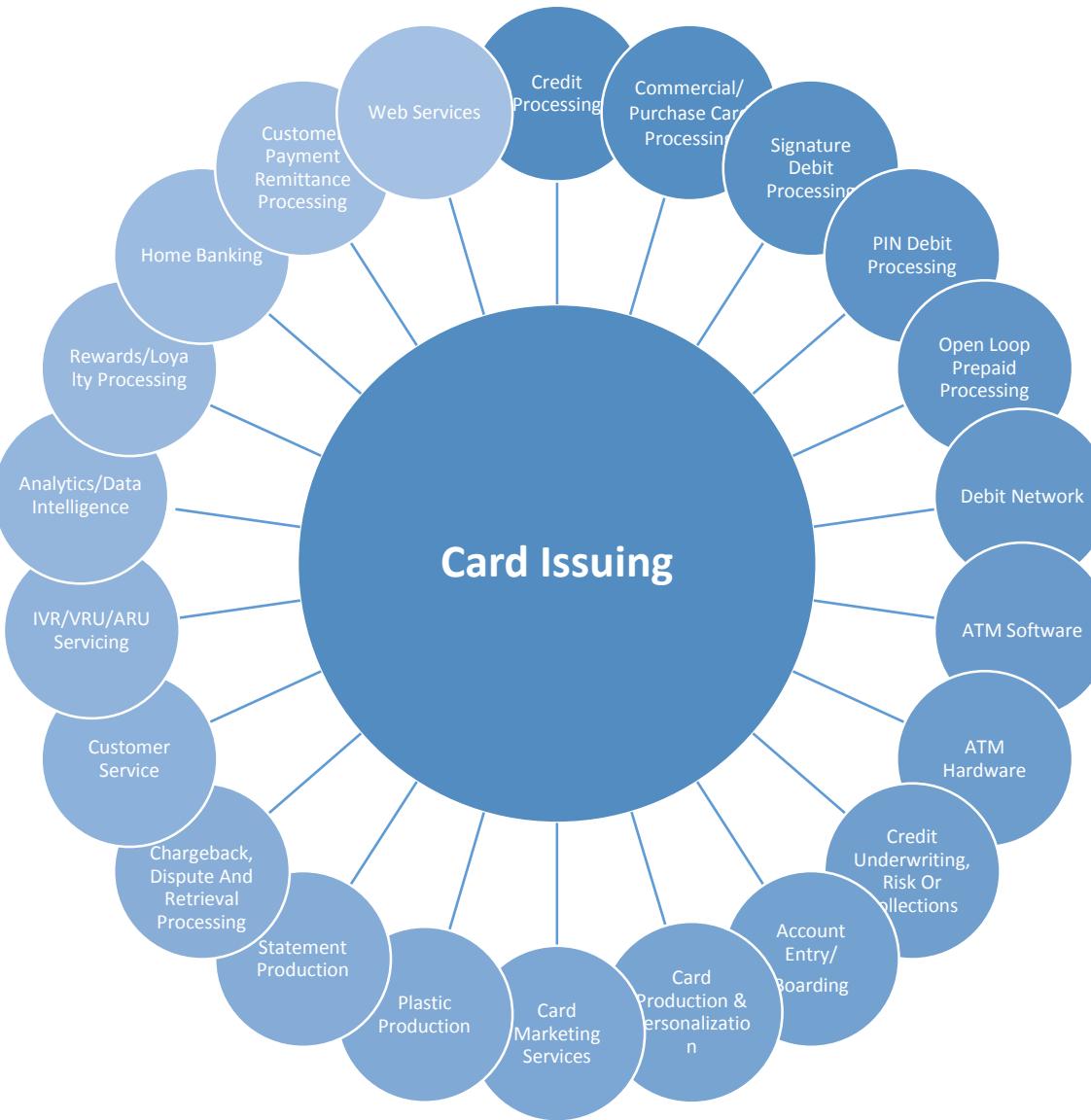
- Interest from revolving credit
- Late fees
- Annual card fees

Similar to acquiring transactions, issuing revenues are allocated to a variety of business costs:

#### Issuing Expenses

- Marketing
- Operational staff
- Loyalty programs & rewards
- Card production
- Fraud
- Bad debt

The credit and debit issuing businesses are complex with many relationships to balance for various segments



### Top Credit System Providers

- FIS
- Fiserv
- First Data
- TSYS
- Vantiv

### Top Debit System Providers

- Elan
- FIS
- Fiserv
- First Data
- Jack Henry
- Mastercard
- Vantiv
- Visa



## Banks have a couple of card issuing options

### Credit

- The credit issuing market can be complex and lengthy to gain market penetration
- Credit issuing options include:

Option	Ease of Entry	Time to Profitability	Revenue Potential	TSG Recommendation
Owning and managing all receivables	Difficult	3-5 years	High	Low
Outsourcing all functions to partner vendor who will leverage your existing bank footprint and brand	Low	3-8 months	Minimal	High

### Debit

- The debit business is the cornerstone to owning not only banking relationships but also payment business line and profitability retention

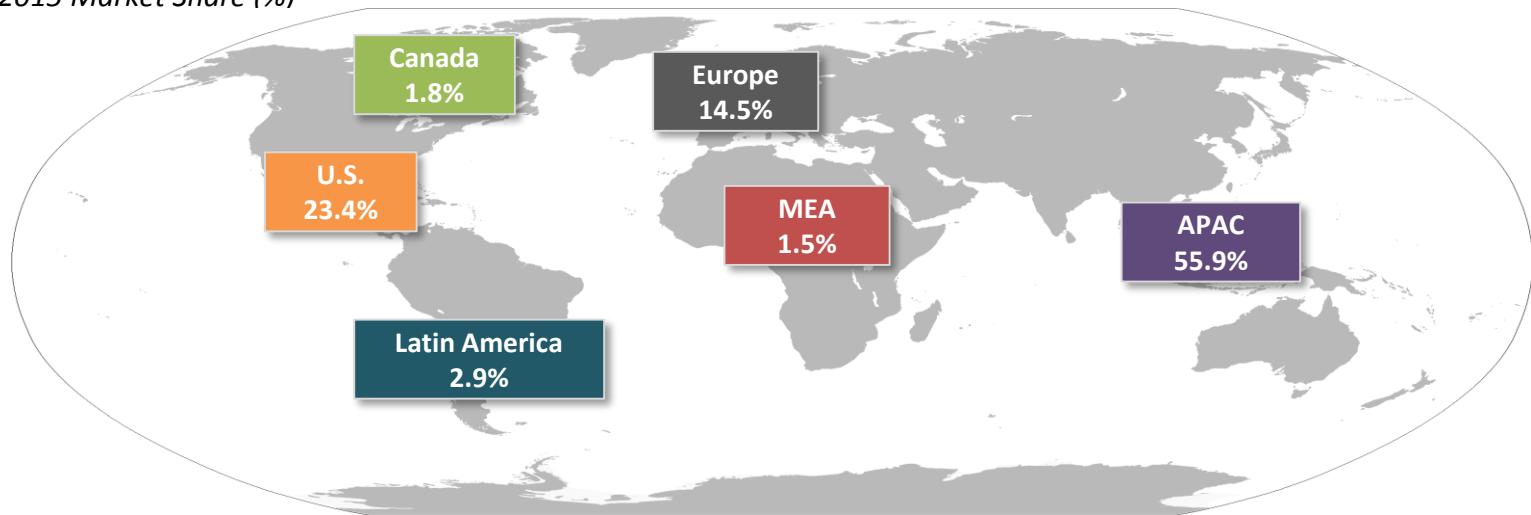
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# Payments Industry Market Sizing

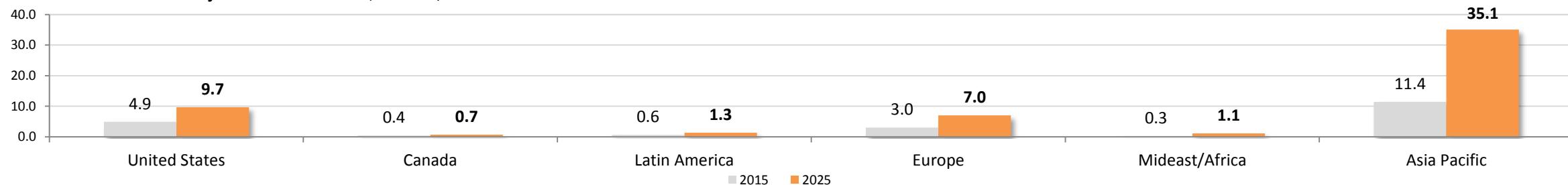
## The Growing Popularity of Digital Payments And Commerce Among Providers And Consumers Is Fueling The War On Cash In Two Respects

- First, the ease of accepting electronic payments is increasing while the cost is going down. For example, the availability of mobile point-of-service (POS) solutions is a trend that many expect will continue growing as competition rises from non-card payments alternatives.
- Second, the growth of digital commerce has become a natural ally in the war on cash. This trend should, in turn, generate growth in electronic payments, which will likely accelerate, doubling card payments volume by 2025.

**Global Card Purchase Volume - 2015 Market Share (%)**



**Purchase Transactions Projected: 2015 - 2025 (in trillions)**





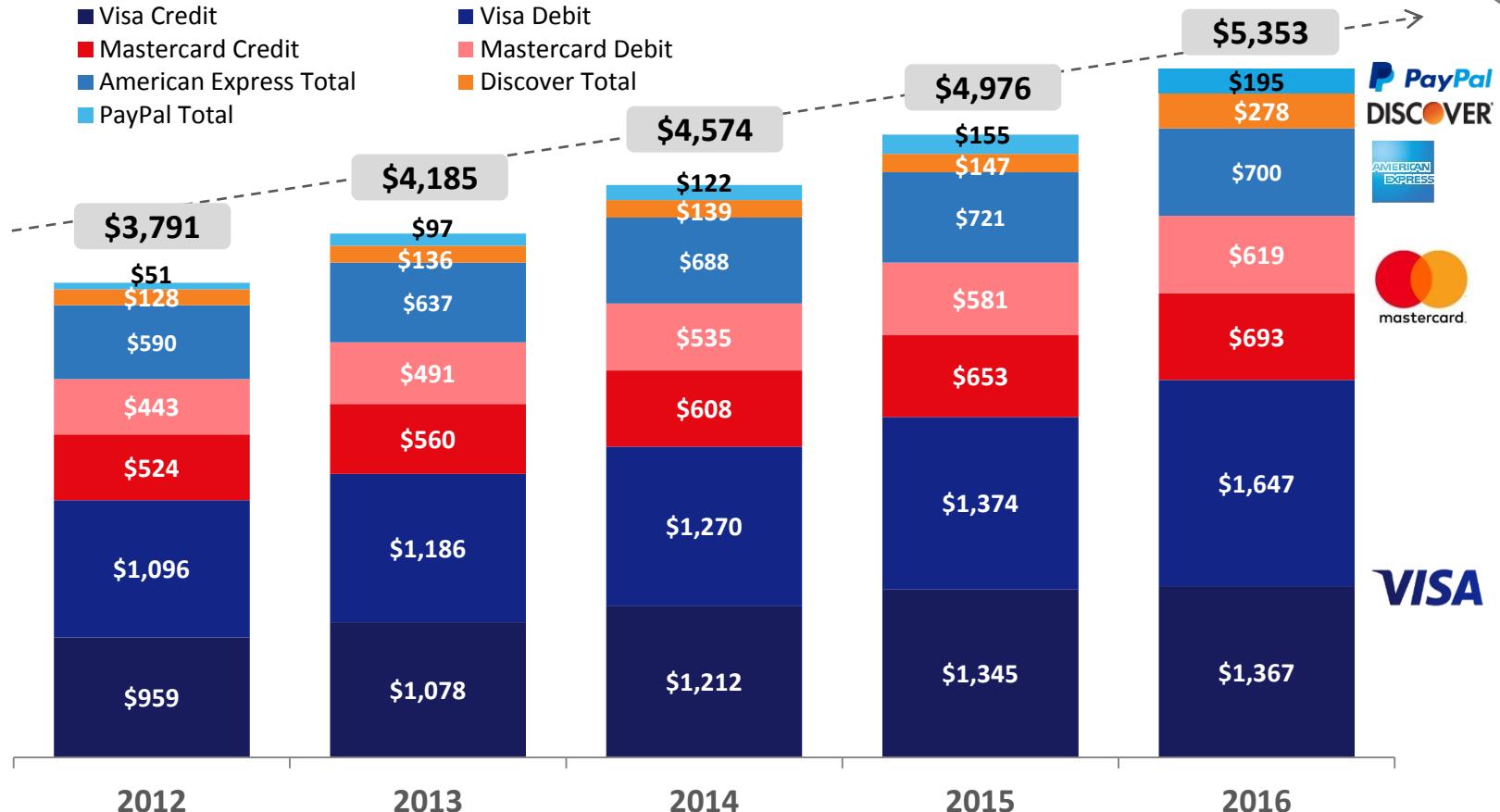
**U.S. card-based volume is expected to increase every year through 2020, when these methods collectively are projected to account for 69.7% of all U.S. consumer payments.**

	2010		2015		2020	
	Volume Share	Transaction Share	Volume Share	Transaction Share	Volume Share	Transaction Share
<b>Paper</b>	<b>38.3%</b>	<b>45.6%</b>	<b>26.1%</b>	<b>33.5%</b>	<b>16.9%</b>	<b>26.1%</b>
Cash	18.6%	33.8%	15.8%	26.8%	12.2%	23%
Check	18.4%	11.3%	9.5%	6.4%	4.2%	2.9%
Money Orders	0.98%	0.43%	0.59%	0.26%	0.35%	0.15%
Official Checks	0.28%	0.09%	0.18%	0.06%	0.09%	0.03%
Travelers Checks	0.06%	0.03%	0.03%	0.02%	0.01%	0.01%
<b>Cards</b>	<b>48.4%</b>	<b>48.3%</b>	<b>59.3%</b>	<b>59%</b>	<b>69.7%</b>	<b>66%</b>
Credit Cards	24.6%	14.1%	30.7%	17.8%	38.7%	22.3%
Debit Cards	20.7%	29.2%	25.3%	36.2%	27.9%	39.4%
EBT Cards	0.85%	1.5%	0.72%	1.4%	0.46%	0.86%
Prepaid Cards	2.2%	3.4%	2.6%	3.7%	2.6%	7.8%
<b>Electronic</b>	<b>13.3%</b>	<b>6.1%</b>	<b>14.5%</b>	<b>7.6%</b>	<b>13.5%</b>	<b>7.8%</b>
Preauthorized Payments	6.9%	2.9%	8%	3.8%	7.4%	3.9%
Remote Payments	6.4%	3.2%	6.5%	3.8%	6%	3.9%

The growth opportunity in the U.S. consumer payments processing market continues to be attractive. Total estimated U.S. Visa, Mastercard, Discover, PayPal, and American Express payment volume exceeded \$5 trillion in 2016.

Est. Payment Network Dollar Volume in the U.S. (Volume in billions, debit is signature and PIN)

+9%  
CAGR



- Feeds off of organic economic growth (inflation and GDP)
- Increased consumer usage
  - Using cards for smaller transactions – e.g. gum at gas stations, as well as larger ticket items, like school tuition
  - Demographic changes – millennials paying with cards or their phone; much less likely to use checks or cash
- Increased merchant acceptance
  - New merchant types seeing the efficiencies of electronic payments acceptance – e.g. B2B to improve receivables

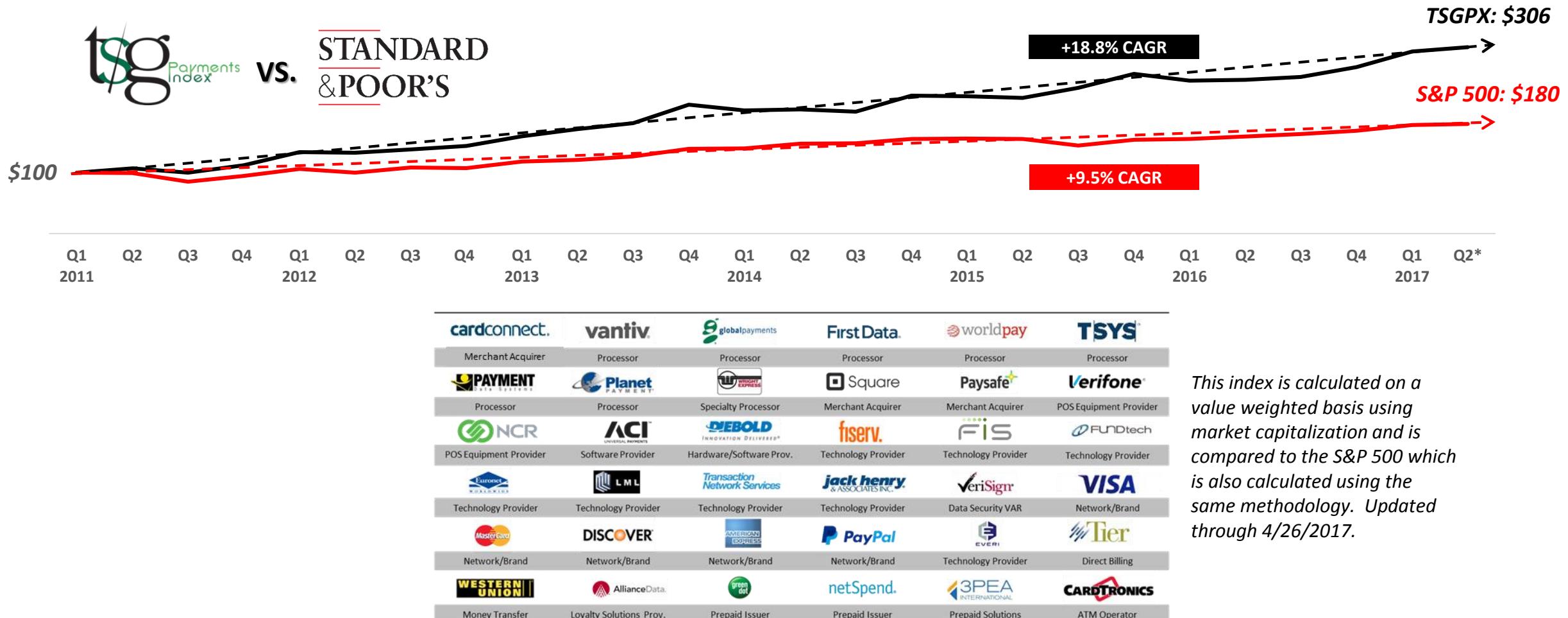
Note: PayPal 2012 figures represent eBay's U.S. "Merchant Services Net Total Payment Volume". 2013 – 2016 PayPal figures represent PayPal's U.S. most recently available/estimated % share of "Total Payment Volume" (TPV)

Note 2: PayPal volume includes volume from a bank account, a PayPal account balance, a PayPal Credit account, a credit or debit card or other stored value products such as coupons and gift cards. As such, some of this volume may be included in other networks as well.

Source: TSG estimates, company financial records



The chart below displays the performance of a \$100 investment in an index of selected payments companies which represent the “TSG Payments Index” - this index is calculated on a value weighted basis using market capitalization and is compared to the S&P 500 which is also calculated using the same methodology. A \$100 investment in the TSGPX in Q1 2011 would now be valued at \$306, as compared to \$180 if invested in the S&P 500.



# Payments Industry Market Sizing

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This chart provides a comparison of public payments companies versus sports teams/organizations. For example, Square was founded in 2009, went public in November 2015, and is already more valuable than the combined value of the top 50 NCAA men's basketball teams. Mastercard and Visa went from membership organizations to publicly traded companies in 2006 and 2007, respectively; since that time, their value has increased drastically taking them well past the value of the NFL, NBA, and MLB.



1 The logos of the sports leagues represent the combined value of all of the teams within the league

2 Represents the value of the top 50 most valuable college football programs \*Payments values are Market Capitalization of each given company on 3/28/17 or publicly released valuations

\*\*Logo placements are not exact – see details on following page

\*\*\*Neither 'Payments' nor 'Sports' lists are all inclusive.

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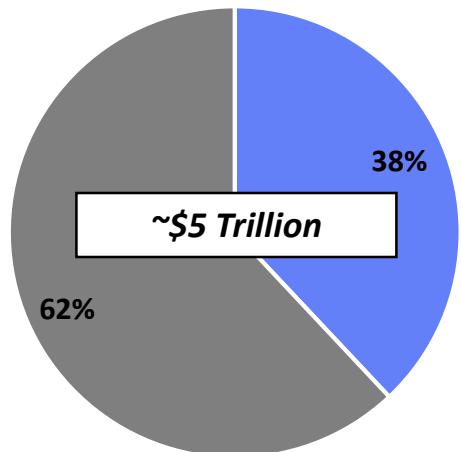
Sources: Yahoo Finance, Forbes, Wall Street Journal, Business Insider, Bloomberg

In the U.S., the top 100 merchants make up 38% of debit/credit card volume, 3.5% of the merchant outlets, and less than 5% of the net revenue to merchant acquiring companies.

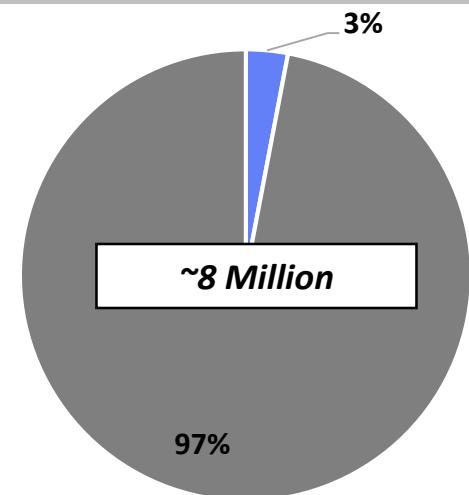
## Merchant Share in the U.S.: Top 100 Versus “All Others”

■ Top 100 Merchants ■ All Other Merchants

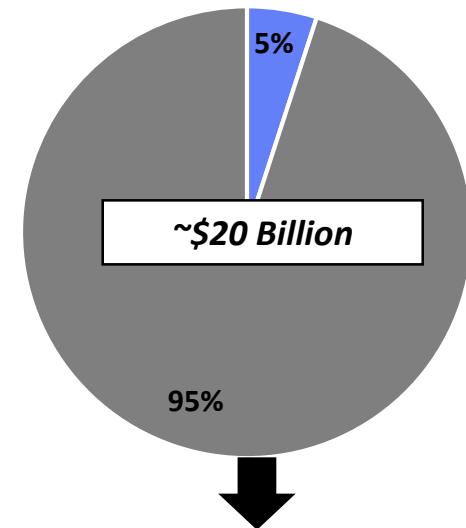
**\$ Volume**



**Merchant Outlets**



**Net Revenue to Acquirers**



**Net Revenue = Gross Revenue + Other Income – Cost of the Transactions**

### Other Income

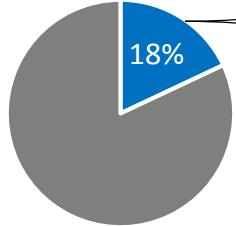
- Equipment revenue
- Lease revenue
- Additional service revenue
- Monthly fees

### Cost of the Transactions:

- Interchange
- Assessments and network fees
- Residuals paid to sub-ISOS
- Third Party Processing Costs

As shown on the previous page, the top 100 U.S. merchants make up 38% of the total card volume with the top 10 U.S. merchants accounting for 18% alone.

- Top 10 Merchants
- All Other Merchants

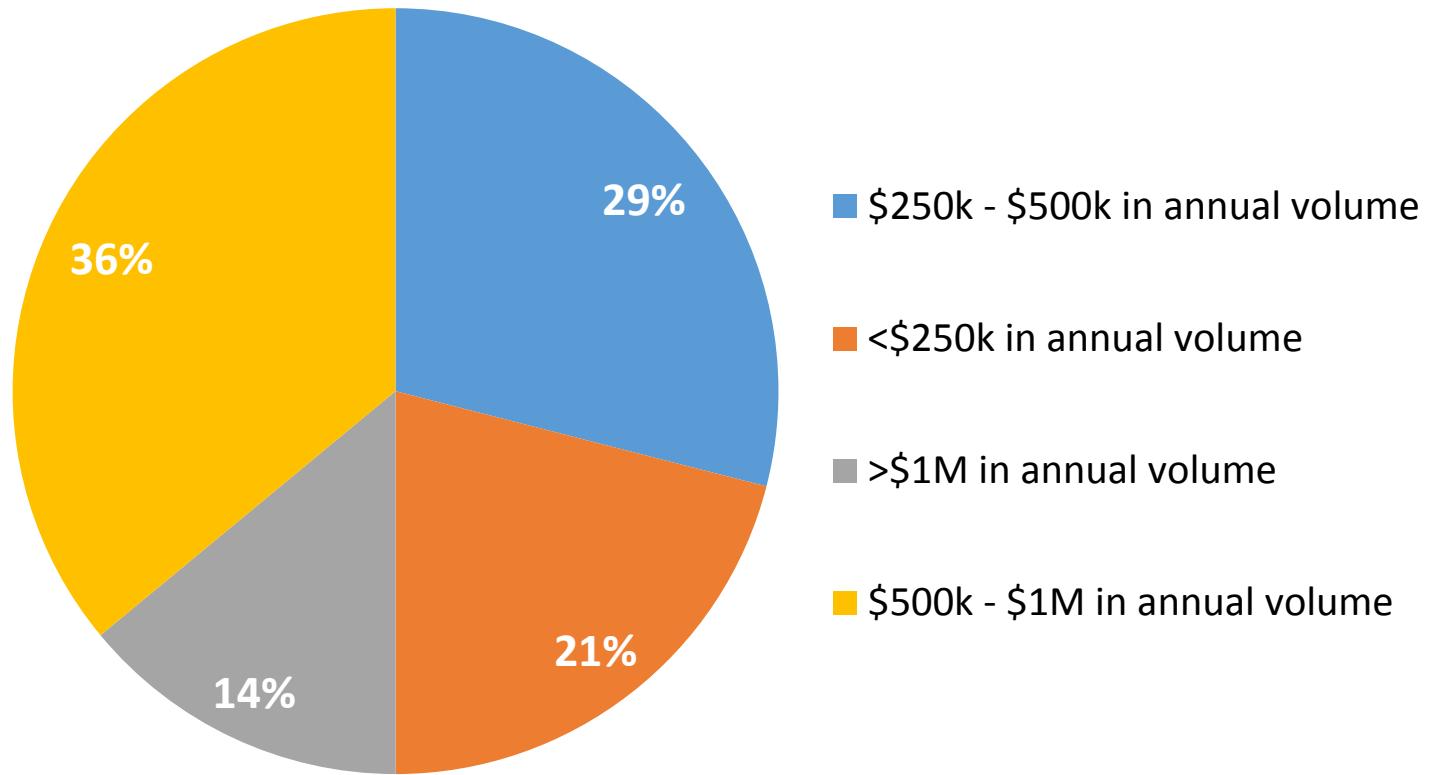


Rank	Company	Estimated Credit and Debit Volume	Volume Share of Top 100 Merchants Credit & Debit	Volume Share of All Merchants Credit & Debit
1	<b>Walmart</b>	\$257,718,000,000	18%	6%
2		\$77,274,750,000	5%	2%
3		\$59,770,500,000	4%	1%
4		\$55,652,250,000	4%	1%
5		\$54,503,250,000	4%	1%
6		\$54,463,500,000	4%	1%
7		\$50,980,500,000	4%	1%
8		\$49,353,000,000	3%	1%
9		\$41,103,750,000	3%	1%
10		\$27,247,500,000	2%	1%
<b>Total: 18%</b>				

## Heightened Focus On Opportunities From Small Merchants

- There is growing optimism among merchant acquirers, ISOs, and ISVs for penetration of smaller merchants (less than \$500k in annual payment volume). Most acquirers see the greatest opportunity to grow their client base among small merchants (21% among merchants with less than \$250k in annual volume and 29% among merchants with \$250k-\$500k in annual volume). This clearly signals a potentially heightened competitive environment in the micro-merchant / SMB segment.

Where Do You See The Greatest Opportunity To Grow Your Client Base?



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## Emerging Payments Trends

## The U.S. Payments Industry Continues To Evolve Rapidly Through New And Standardized Technologies, And Expanded Development Communities

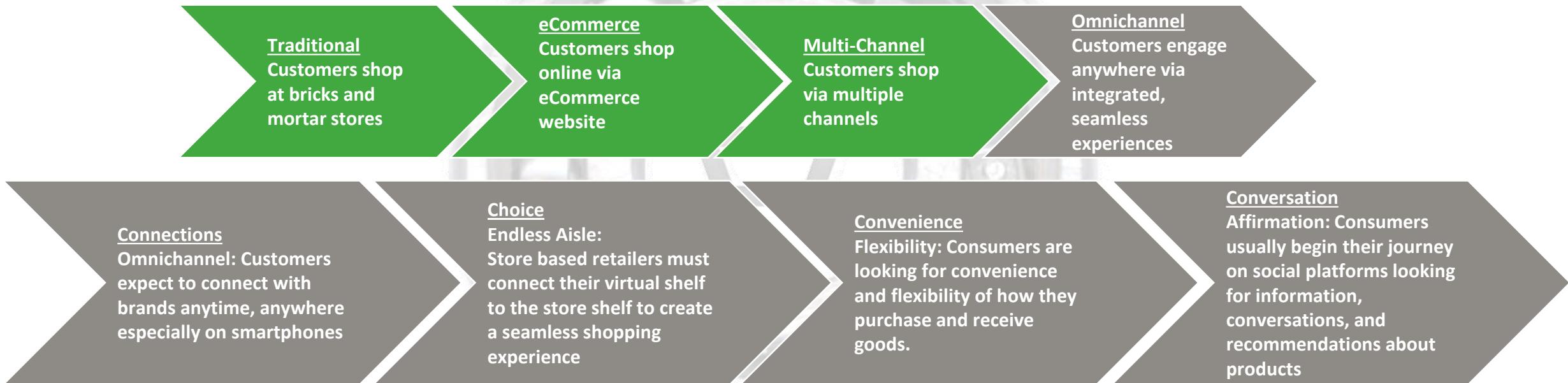
- The effect of new technology players have created an ecosystem where overlapping relationships have resulted in a more complex marketplace
- The combined efficiencies have supported sustained growth in the market
- Merchants are utilizing these solutions to provide consumers with increased access and convenience
- Merchants are focused on seamless presentment of products and services to increase sales
- Consumers are adapting and pushing growth in eCommerce business due to shopping convenience, minimal shipping time, and product availability
- The growth in eCommerce payment solutions is leading to disintermediation between the seller and the consumer
- U.S. retail eCommerce growth is predicted to grow double digits over the next four years



## Technology Proliferation Has Spurred Multichannel Engagement Opportunities

- In this new environment, consumers can channel-hop among online and physical stores, smartphones, tablets, and social media. Omnichannel retailing allows them to select the channel that is most convenient for making purchases, reading product reviews, comparing features and prices, and getting customer support.

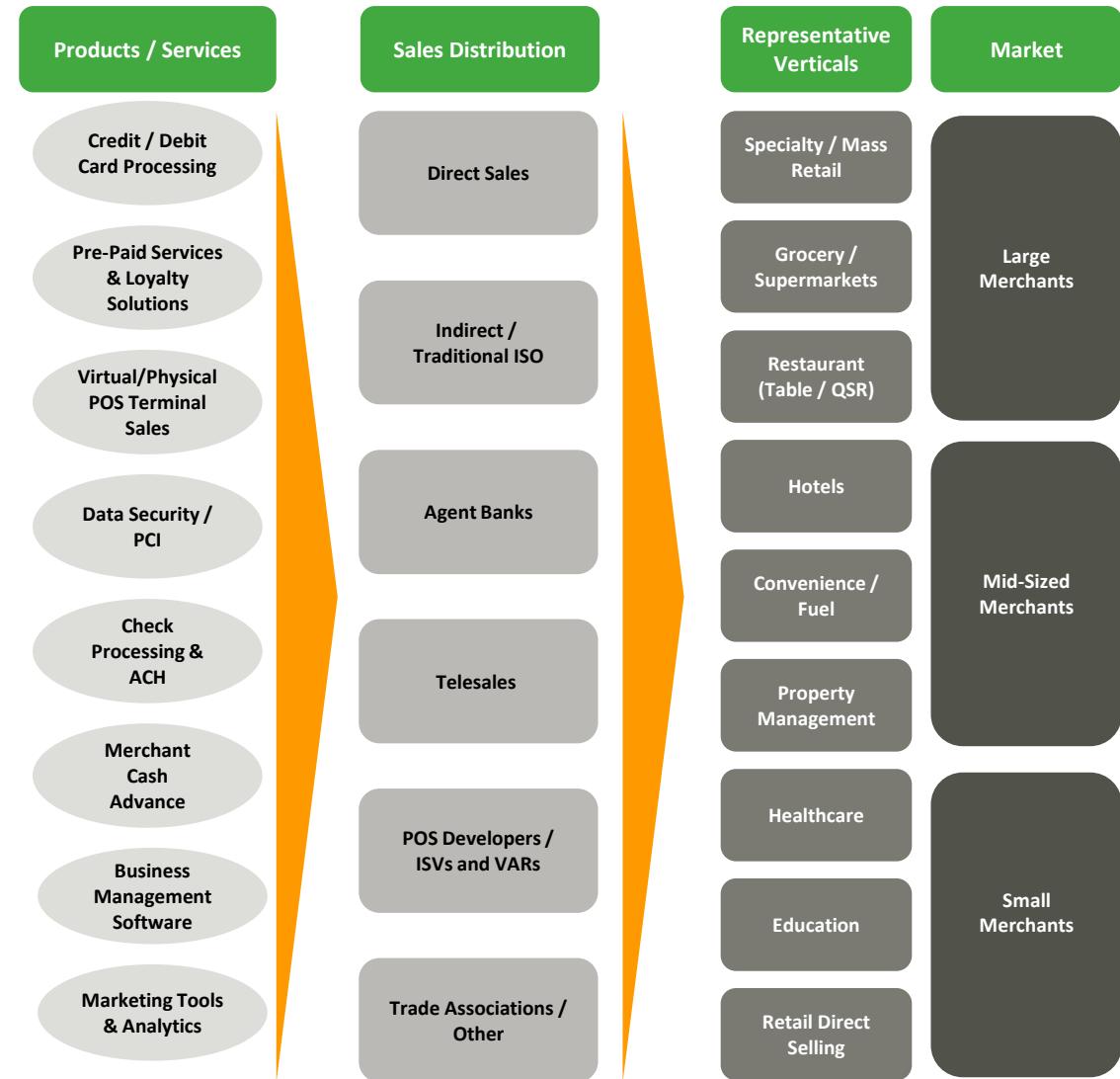
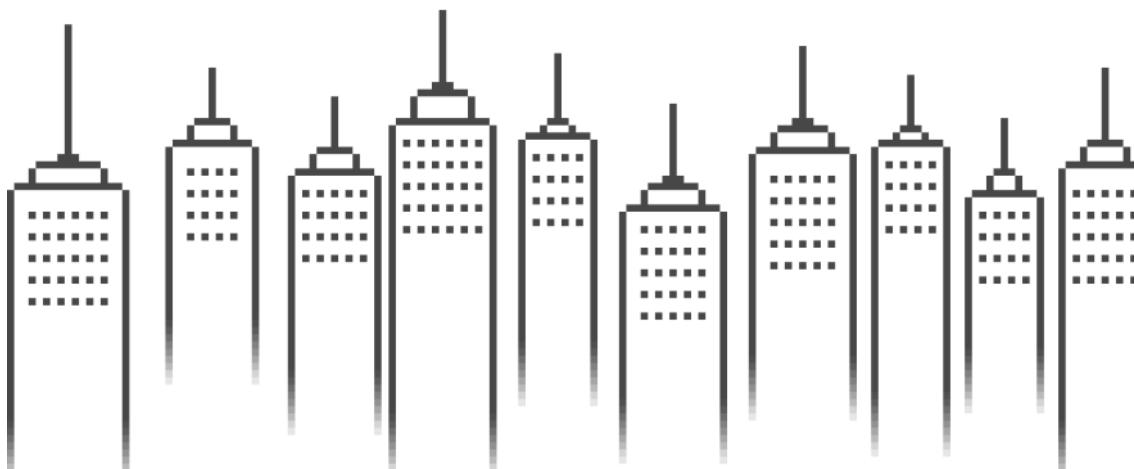
### The New Merchant Landscape



## The Evolved Acquirer

In recent years, acquirers have evolved to provide more products to merchant clients such as business management software, marketing tools and analytics, loyalty, and mobile payment solutions

- As non-traditional competitors continue to carve out niche markets in the payments acceptance space, acquirers are increasingly challenged to differentiate services and deepen relationships with merchants.
- By providing value-added services such as analytics or loyalty program management on top of core payment processing capabilities, acquirers can begin to close the gap and strengthen these critical relationships.
- Most top acquirers are supplementing capabilities that incorporate software-based interaction and end-to-end payment processing capabilities.





## **Today's ISO/Acquirer has evolved their business model for a number of strategic reasons:**

- To contend with the proliferation of disruptive technologies
- An ever-changing list of regulations
- New competitors and entrants to the fast changing payments ecosystem

## **The modern acquirer may specialize on:**

- A particular technology
- Focus on a specific sales channel such as an ISV or VAR referral arrangement
- Focus on a certain industry vertical
- Or a combination of all

## **By specializing, the acquirer is able to provide more value to their merchant clients through understanding the individualized needs of an industry, whether is be**

- Specific technology (Home Contractor needs a mobile POS)
- Specific Sales channel (Bank Referral or ISV Distribution partner)
- Specific Industry vertical (Legal Services marketed through Bar Association endorsements)



## Three Key Emerging Acceptance Trends Are Receiving The Lion's Share of Attention

### mPOS

- Mobile point of sale (mPOS) growth continues as the technology deepens its reach across vertical industries, merchant tiers and geographies. The global mPOS installed base is estimated to grow from 13.3 million units today to 54 million units in 2019. Diverse factors including enterprise deployments, expansion into new vertical industries and financial inclusion in developing economies will serve to increase the installed base at a 32% CAGR during that forecast.

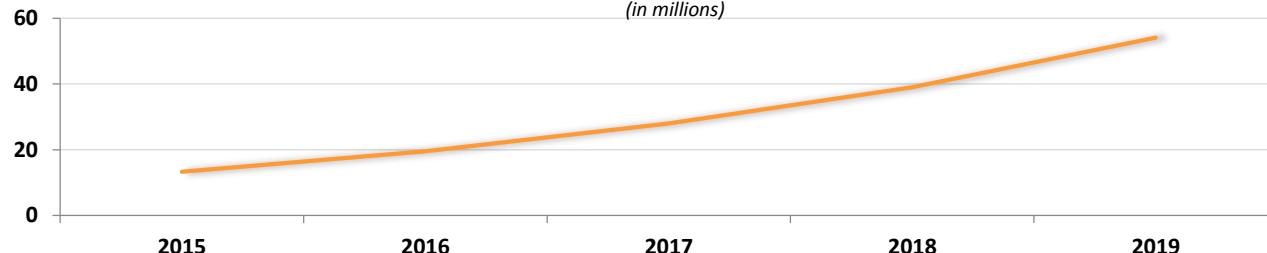
### Mobile payments

- Consumers worldwide will use their mobile phones to spend a total of \$620 billion on all forms of mobile transactions this year, representing a 37.8% year-on-year growth from \$450 billion in 2015. By 2017, total mobile payment volumes will reach \$780 billion, climbing to \$930 billion in 2018 and \$1.08 trillion in 2019.

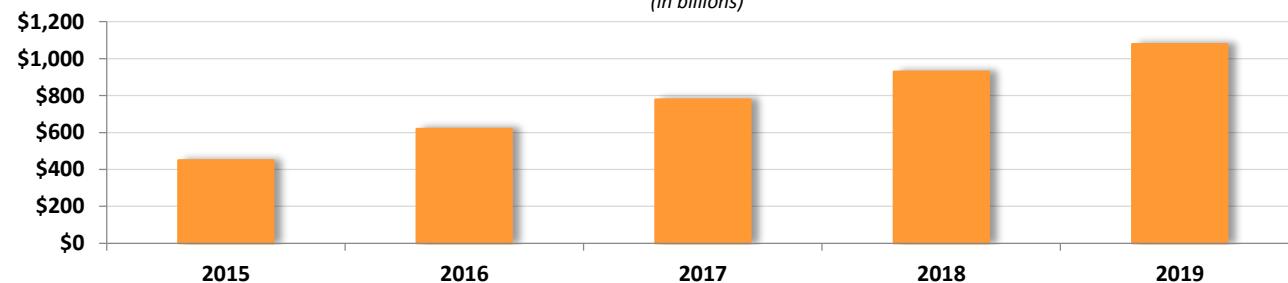
### eCommerce

- Retail eCommerce sales made up 8% of the total retail market worldwide, or \$1.92 trillion. By 2019, that figure will jump to \$4.1 trillion, yet retail eCommerce will account for just 13% of retail purchases. Asia-Pacific will be the main growth driver. In 2016, over half of all internet users worldwide and 24.3% of the global population will be digital buyers. Nearly half of these digital buyers will reside in Asia-Pacific, even though they account for only 22.5% of the region's population.

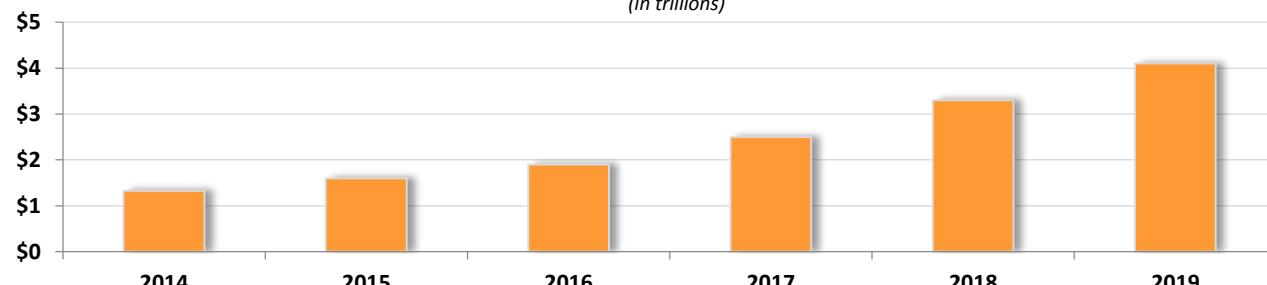
Global mPOS Installed Base Growth: 2015-2019



Global Mobile Payments Market: 2015-2019



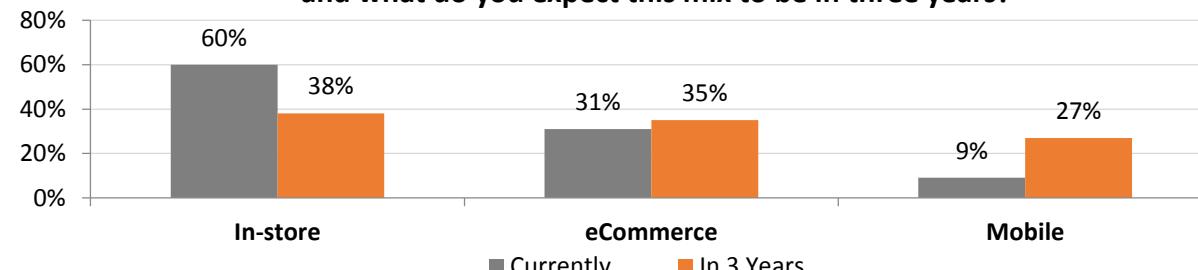
Global Retail eCommerce Market: 2014-2019



## Targeting Growth Opportunities In Mobile And eCommerce

- U.S. acquirers are clearly targeting future expansion opportunities in both mobile payments and eCommerce. Most acquirers see in-store payment channels driving about 60% of new business – and this is expected to fall in three years. eCommerce channels are expected to expand modestly in that timeframe. Finally, mobile channels are expected to see strong adoption over the next three years.
- Many acquirers expect large technology companies such as Apple, Amazon, and Google to take share over the next three years in eCommerce, along with large payment facilitators or gateways such as PayPal. About 20% of acquirers expect established, fast-growing eCommerce payment providers (such as Stripe or Adyen) or completely new players to gain significant share from incumbents.

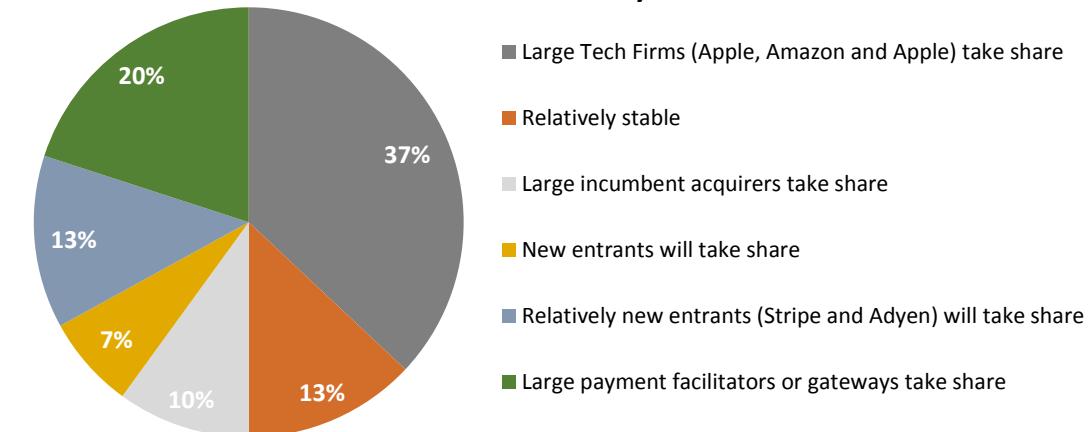
**What % of new business comes from in-store, eCommerce and mobile – and what do you expect this mix to be in three years?**



## Mobile Payments Sentiment Improves Significantly

- There is a significantly more constructive outlook for mobile payments. Most acquirers expect mobile wallets to succeed. In addition, most acquirers expect Apple and Google to succeed (given their integration with smartphone operating systems), expect retailers to succeed (as they leverage their ability to deliver an omnichannel experience), and they also expect Visa/Mastercard to succeed (given their brand recognition and presence in physical wallets).
- Interestingly, acquirers, ISOs, and ISVs are optimistic about mobile payments gaining traction in both in-store (brick and mortar) and eCommerce transactions.

**In eCommerce, how do you expect the market structure to change over the next three years?**



## The POS and its Capabilities Are Evolving

### From POS To Retail Management

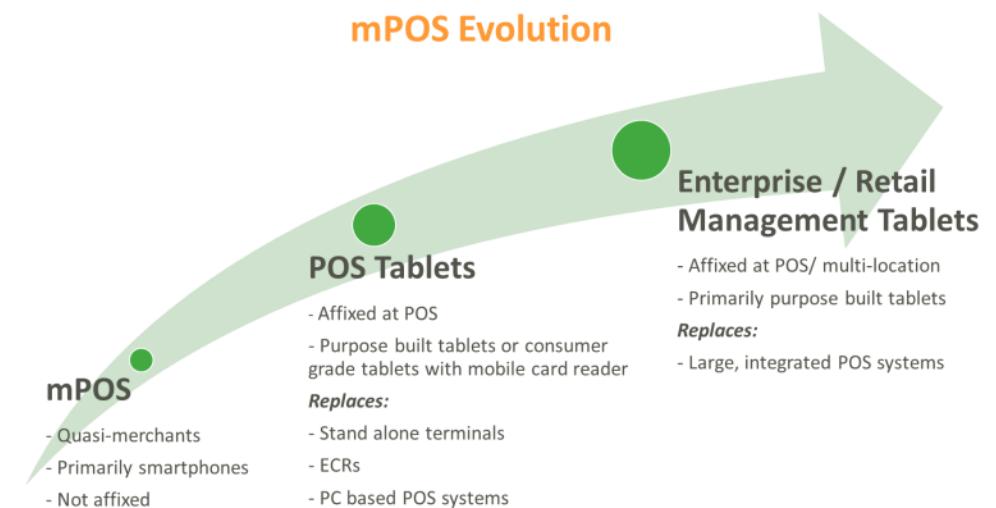
- Over the years, POS systems have evolved from cash registers to full-fledged management solutions that allow merchants to manage inventory, reporting, customer management, and ecommerce from one platform (smart terminals). Clunky registers and bulky computers are being replaced by sleek tablets and phones.

### The Popularity Of Tablets And Other Handheld Devices Has Made Cloud Based POS Solutions An Attractive Option

- Newer POS systems can be more tightly integrated to support omnichannel, customer engagement and other business enhancing initiatives.
- Newer POS systems can handle a wide range of payment options (including “digital wallet” payments) and are able to play a central role not just in ringing up sales but also in marketing, pricing, inventory control, customer service, integrating with accounting, property management, digital signage, security and other systems.
- The ability to support loyalty programs focused on getting repeat customers is often cited as a driving force that is making small businesses rethink their reliance on traditional POS solutions. SMB retailers want to be able to quickly identify loyal customers and more easily offer coupons and other perks.

### Tablet Based POS Systems Are Taking Off

- Tablet-based POS solutions will likely see high double-digit growth in the coming years, with specialty retailers deploying about 45% of all tablets shipped to retail.
- Mobile POS solutions based on nonrugged handheld devices will also experience heavy growth over the next two years, particularly among restaurants. In many cases, however, this will involve replacement of older mobile devices.
- While sales of traditional POS shipments will not decline, they will not grow as fast as they otherwise would. A typical scenario might be for a small business to replace its current POS system with three mobile devices and one fewer stationary device.
- Over time, mobile and tablet POS solutions will be replaced more frequently than stationary systems. The opportunity is for resellers to sell more software licenses.



Source: TSG analysis; IHS estimates



POS solutions and needs are extremely fragmented across vertical markets, requiring sellers to understand the unique differences from segment to segment. **The POS hardware and software market is similarly fragmented, with no single solution or provider being dominant across verticals and tier sizes.**

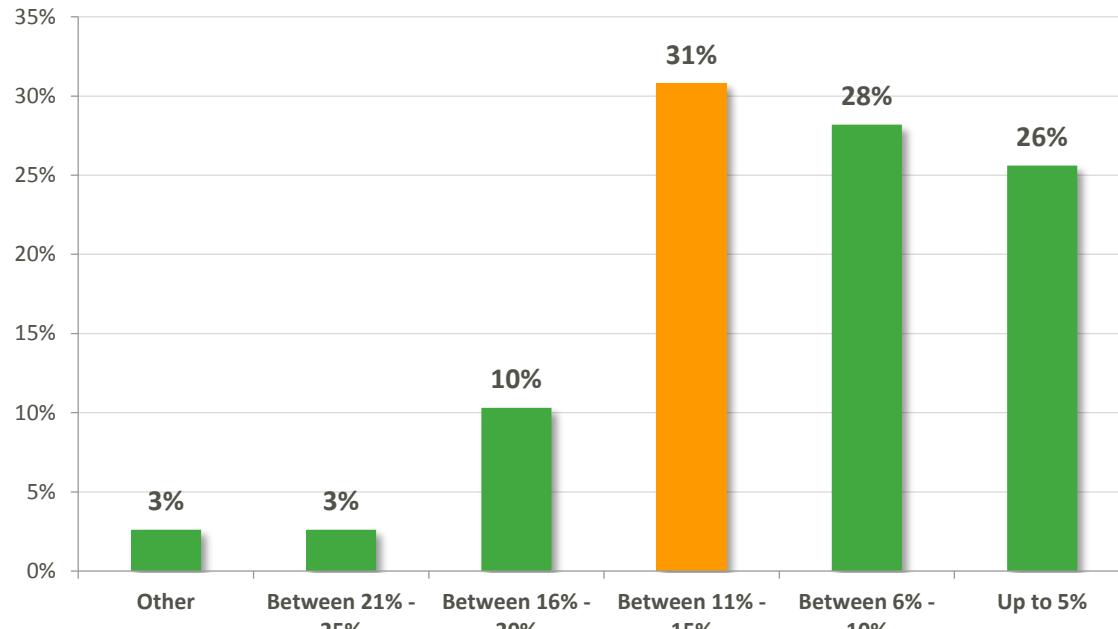
Top Dongles and mPOS	Top Cloud Based Tablet Solutions and Smart Terminals	Top Fixed, Hardwired Incumbent Terminals

Top POS Software				
Data and Analytics	Inventory	Fraud and Risk	B2B	Merchant Cash Advance

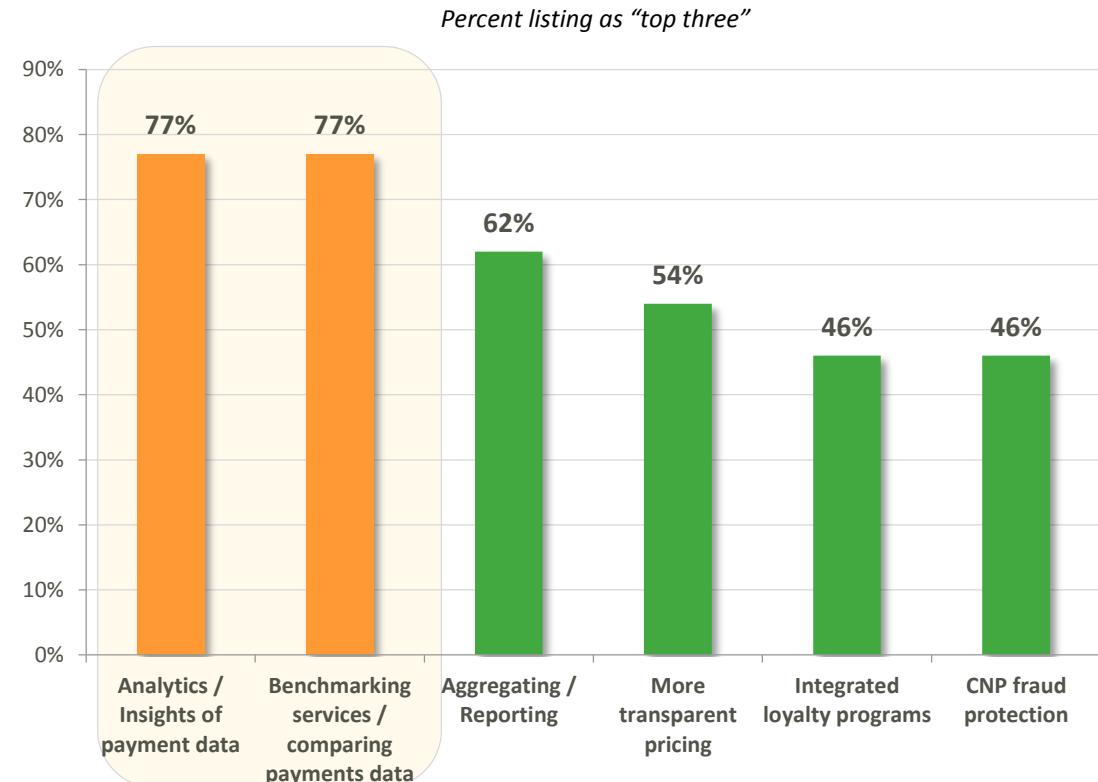
## Loyalty And Analytics Solutions Viewed As Driving “Stickier” Merchant Business

- New customer loyalty and analytics solutions have long been viewed as ways for merchant acquirers/ISOs to enhance the “stickiness” of existing merchant business, and to provide supplemental revenue streams for traditional processing business. Most acquirers have cited loyalty and analytics solutions as providing the ability to help drive lower merchant attrition, defend from price competition, or differentiate in competitive bids.

How much do you believe merchants are willing to pay for value added services as a % of offer value?



What value added services would you most like to see your acquirer/ISO providers offer?



Source: PricewaterhouseCoopers

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## The ISVs

- An Independent Software Vendor (ISV) is a company that provides software solutions that aid in managing different functions of a business operation. Generally, ISVs specialize their solution to a specific merchant vertical often times at a granular level.

## Why Are ISVs Important?

- ISVs integrate, or are primed to integrate payments features into their software. These vendors offer payments companies a complementary solution and open up a new merchant sales channel. The ISV channel is often characterized by high merchant retention rates, due to the integral role a multi-functional software system provides.
- The model going forward is technology-enabled, software-led distribution that allows integrated payments with more flexibility and less friction.

## The ISV Opportunity

### A Conduit To Merchants

A valuable customer-acquisition channel for payments companies, one with many benefits and a few challenges.

### Payment Gateway And Omnichannel Capabilities

can be key product solution differentiators for merchant processors vying for ISVs.

### Some Industry Verticals Generate Higher Splits For ISVs

, as acquirers have had to compete more aggressively for ISV distribution partners in those industry verticals.

**In Most Instances, Acquirers Pay ISVs Residual Payments Or Revenue Splits** tied to the net revenue earned by acquirers. Industry competition is putting pressure on the economic split between acquirers and their ISV partners. Several major acquirers are accepting lower economics in an effort to gain ISV distribution partners.

### ISVs Are Agnostic

ISVs are likely to partner with multiple acquirers. ISVs are also likely to serve just one or two industry verticals, which is likely due to the industry-specific nature of their software.

### Non-economic Elements Are Key To ISV Relationships

ISVs rank customer service as the most important factor in selecting their preferred acquirer. The economic commission split is an important factor for ISVs, but merchant referrals and product solutions are also prominent factors.

### Increasing Reliance on Software

More merchants are expected to use business-management software, especially as cloud-based systems develop and bring costs down.

**The ISV Phenomenon Exploded** to more than 10,000 companies across the U.S.

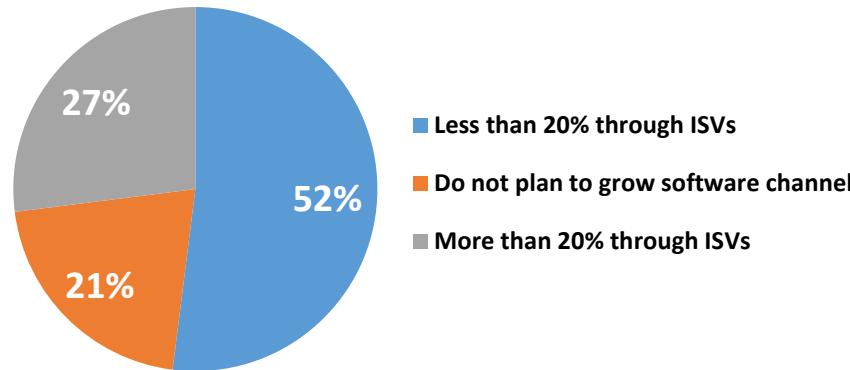
### Merchant Stickiness

Merchants acquired via ISVs tend to stay with the provider of their business-management software longer in comparison to how often they switch merchant-services providers.

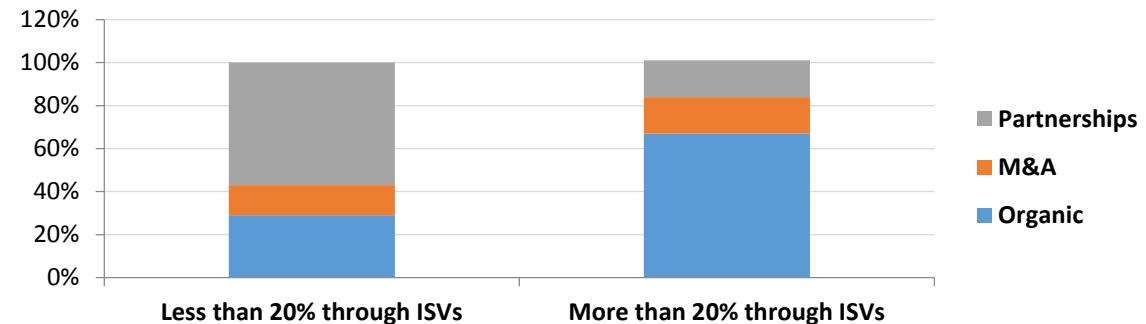
## Integrated Payments: Software Partnerships Are Integral

- Acquirers appear focused on increasing their software exposure via partnerships (for acquirers/ISOs with less software exposure) and organic growth (for those with more exposure). Penetration is expected to increase most in government, education, financial services, and hospitals.
- Public commentary from merchant acquirers has generally been consistent with the view that integrated payment solutions drive a “stickier” base of merchant businesses, as backend processes become intertwined with front-end systems. Many merchant acquirers and ISOs have accelerated the pace at which they have partnered with ISVs in order to expand their software-enabled footprints especially in education, healthcare, government, and financial services. ISV residuals are expected to increase.

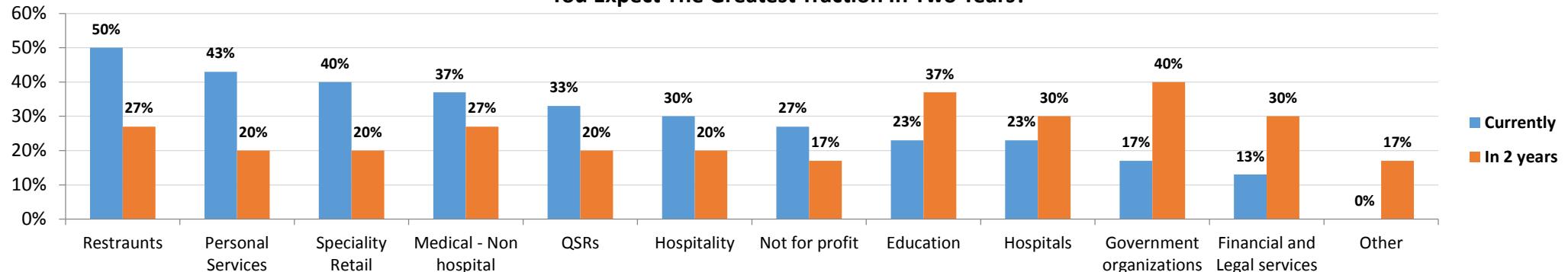
**Acquirers and ISOs: What Is The Size Of Your Software-enabled Channel?**



**Acquirers And ISOs: What Is The Size Of Your Software-enabled Channel And How Do You Plan To Expand It?**



**Acquirers: In Which Industry Verticals Are You Seeing The Greatest Traction With ISV Solutions, And In Which Do You Expect The Greatest Traction In Two Years?**

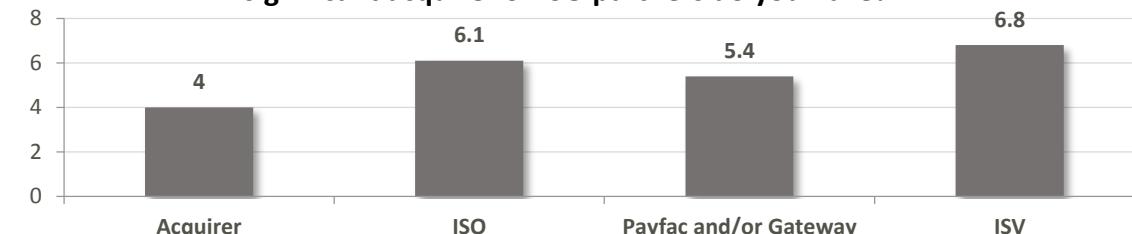


## As Incumbents Establish More Partnerships, The Focus On Commission

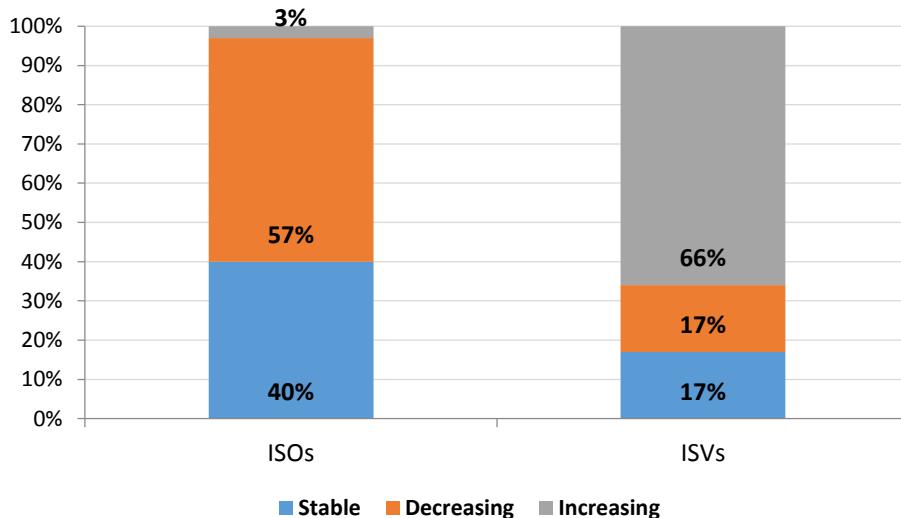
### Dynamics Is Likely To Increase

- ISV pricing dynamics are likely to become an increasing topic of discussion as these partnerships become a key growth driver. Many expect ISV residuals to increase over the next three years. Although the outlook on ISO commissions is somewhat surprising, the general direction of commissions and residuals is consistent with the well-established trend of the ISO channel weakening as the ISV channel has strengthened.

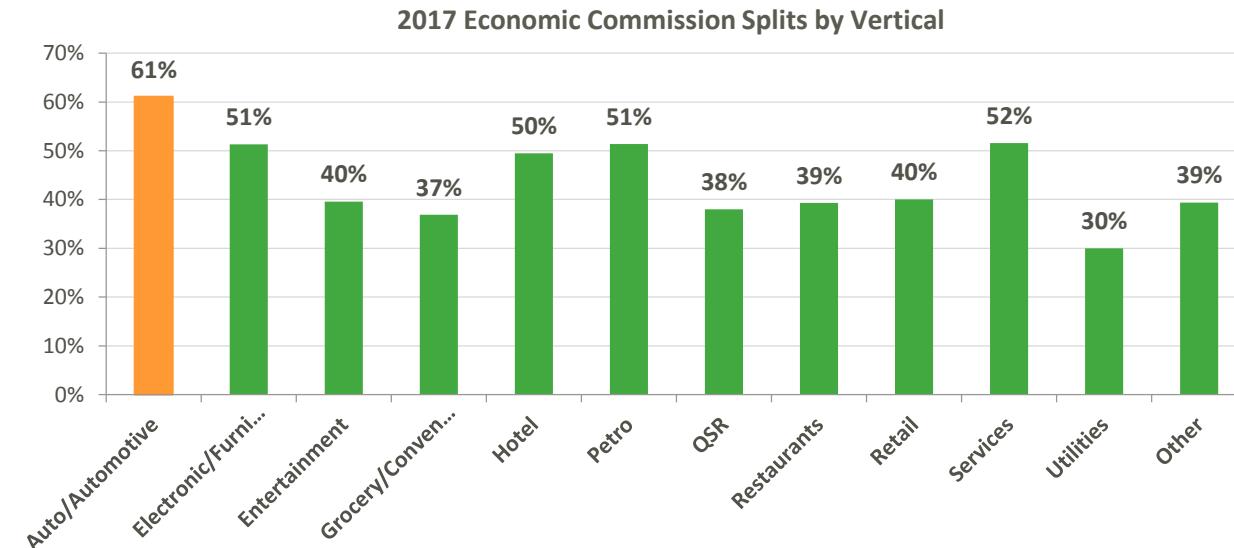
If you are an acquirer or ISO, how many significant software partners do you have? If you are an ISV or payment facilitator/gateway, how many significant acquirer or ISO partners do you have?



### Which of the following do you view as the most likely trend for ISO and ISV commissions/residuals over the next 3 years?



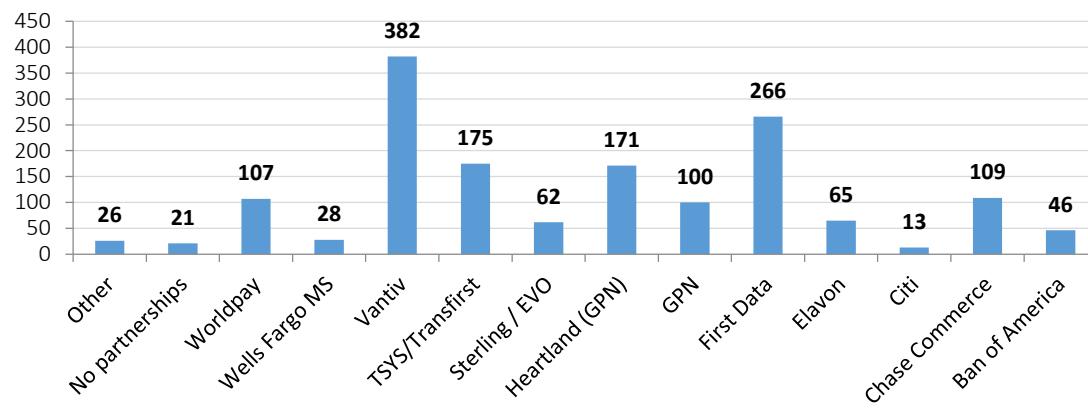
### Certain Industry Verticals Appear To Generate Higher Splits For ISVs, As Merchant Processors Have Had To Compete More Aggressively For ISV Distribution Partners In Those Industry Verticals



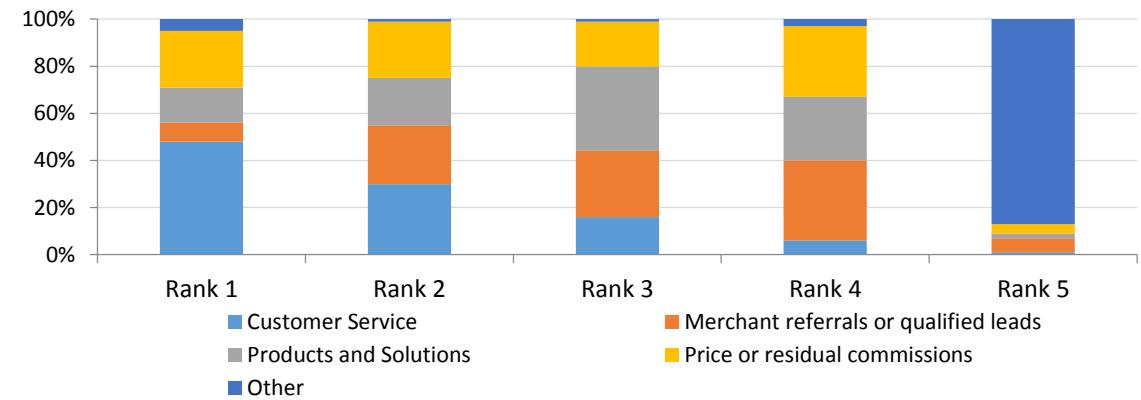
## Drivers of ISV and Merchant Processor Partnerships

- Most ISVs cite Vantiv/Mercury and First Data most often as merchant processor partners. The next cluster of processing partners included Heartland Payments (now part of GPN), TSYS/TransFirst, WorldPay, Chase Commerce and Global Payments. “Other” responses include merchant processors like Cayan, CoCard, BluePay, Desjardins, Intuit, North American Bancard, Priority Payments, Payment Logistics, Sage Payments and Total Merchant Services. ISVs rank customer service as the most important factor in selecting their preferred merchant processor.

**ISV Survey (N=1571): Which Merchant Payment Processor Do You Most Often Utilize For Your Merchants?**



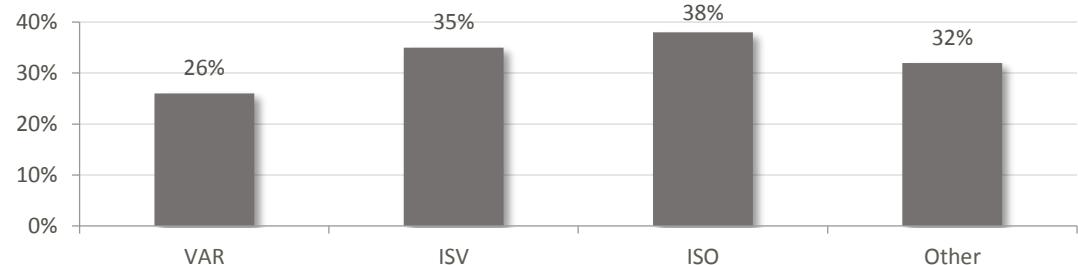
**ISV Survey: Rank Of Factors Used In Choosing A Preferred Payment Processing Partner (blended)**



## Omnichannel Payment Processing A Growing Need For SMB Merchants

- Payment gateway and omnichannel processing capabilities can be key product solution differentiators for merchant processors vying for ISVs. A third of ISVs state that their SMB merchants have requested an omnichannel payment solution. Merchant processors in general have all become more vocal about their eCommerce/omnichannel offerings, which is likely indicative of growing SMB demand for such solutions.

**% of SMB Clients Requesting Omnichannel Payment Solutions**





## Investments In Payments Is Soaring Around The Globe

The payments market is exploding from innovation and changing rapidly which provides opportunities for new partnerships and strategies. However, not all entities are receiving similar amounts of investment attention. Certain payments sub-categories are clearly receiving more attention from investors than others.

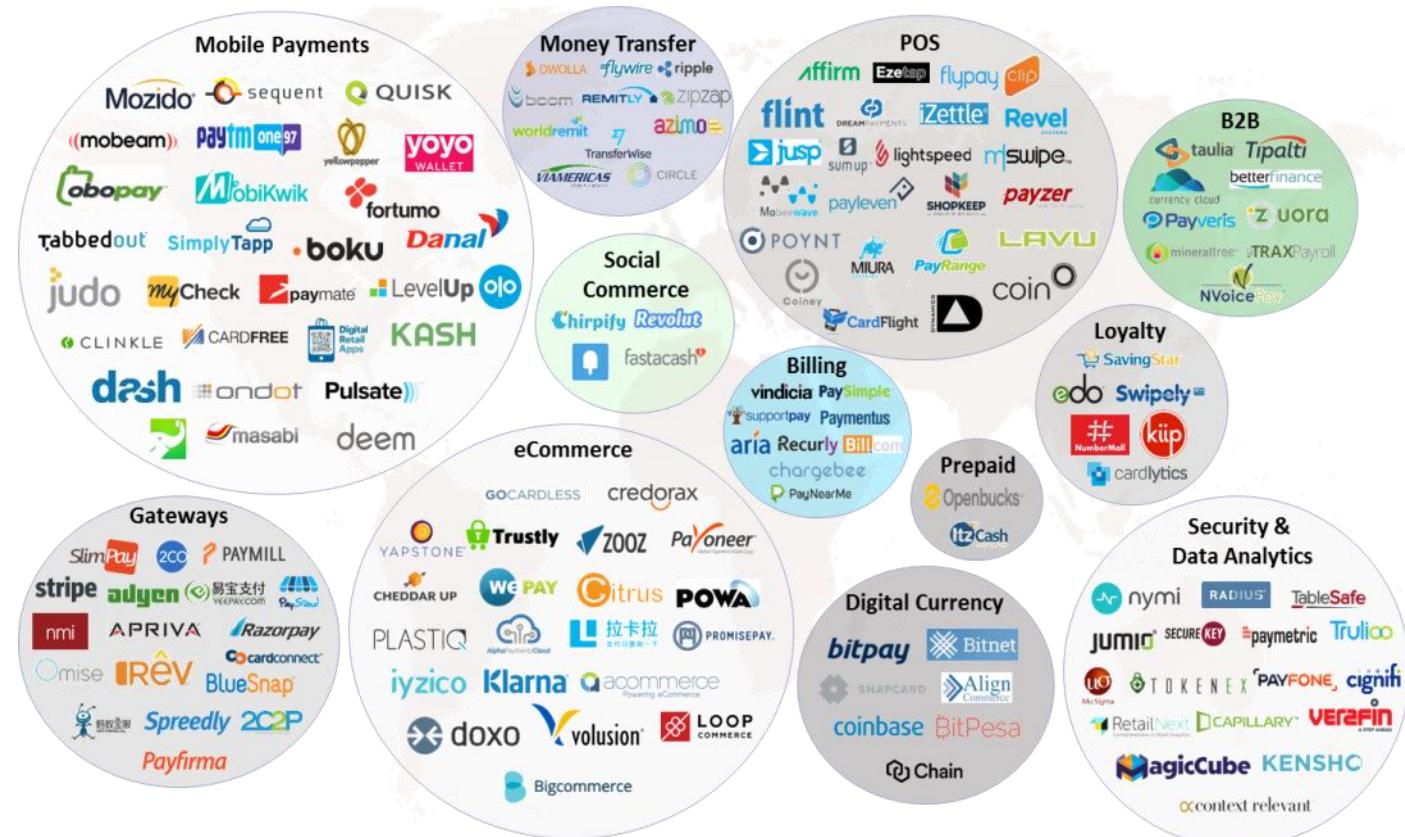
**Within payments, investment bets are primarily being placed on startups that specialize in three different types of services:**

### POS and Mobile Payments

- Companies like iZettle and Adyen create tools that allow businesses to streamline purchasing at the POS. Products they offer include specialized card readers, countertop stands and terminals, mobile-payment technology to speed up in-store payments, and software to track and follow up on sales.
- Companies like MobiKwik, and TransferWise give consumers more convenient and secure ways to manage money, send money abroad, and/or use mobile wallets.

### eCommerce Payments Solutions

- Companies like Stripe, WePay and Affirm offer businesses secure, fast, and cheap ways to accept payments online and on mobile. Their main products are their APIs (application programming interfaces), and they usually charge a per transaction percentage and fees. Often, individual companies will offer additional services. For example, while Affirm offers an online payments API, it also offers financing options for B2B customers.





## Most Emerging FinTech Companies In The Payments And Transactions Space Have Solutions That Piggy Back On The Traditional Payments And Transaction Networks

- They focus on enhancing customer experience, increasing convenience and streamlining the process of using bank and card payment networks with solutions like wallet platforms that can be used by companies to leverage digital wallet capabilities and POS technology solutions to make payments and authentication easier and safer.

## Many Solutions From Emerging Payments FinTech That Can Operate As Independent Networks Are Also Interconnected With The Traditional Networks

- Most emerging payments FinTech companies, while offering more efficient payments and transaction solutions, ensure interconnectivity with traditional networks to leverage the large customer base. Most closed loop payments solutions or online money transfer solutions have a strong dependency on bank and card accounts for the initial source or final destination of funds.

## The Few FinTech Solutions That Operate Primarily As Independent Networks Are Mobile Money Based Payments Networks From Large Mobile Telecom Companies, Primarily In Emerging Markets.

- They leverage their massive customer bases, many of whom are not yet part of the formal financial system with no bank accounts, and offer cheap and efficient payment and transaction services on their own networks.

## It Is Apparent That Emerging Solutions And Business Models In The Payments And Transactions Services Space Are Still Strongly Dependent On The Traditional Infrastructure

- Their solutions are improving customer experiences, streamlining processes and enhancing the value proposition of the traditional payments networks benefiting traditional incumbents like banks, card associations and other infrastructure and processing firms.



A Number of Payments Innovations Have Emerged In The Past Five Years, Leveraging Mobile And Connectivity To Make Payments Simpler And Add Value. Most Payment Innovations Do Not Disrupt The Existing Payment Processes, But Rather Modify Front-End Processes To Improve Customer And Merchant Experience.

## Key Innovations For The Cashless World



### Mobile Payments

- Mobile wallets
- Mobile-based merchant payment



### Integrated Billing

- Mobile ordering & payment apps
- Integrated mobile shopping apps



### Streamlined Payments

- Location-based payments (geotagging)
- Machine-to-machine payments



### Next Generation Security

- Biometrics / location-based identification
- Tokenization standards



## Common Characteristics Of Successful Payments Innovations



Payments innovations allow customers to make payments in a single tap or automatically by leveraging connectivity (e.g., wireless network, near-field communications)



Most innovative payment solutions are not restricted to a single payment method, allowing customers to manage and use a variety of credit cards, debit cards or bank accounts for payment

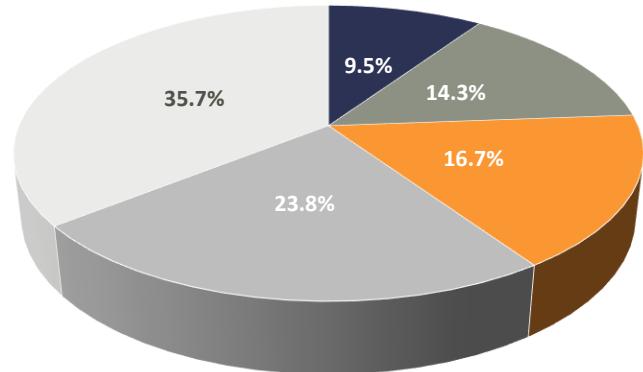


Many innovative solutions offer value-add functionalities in addition to payments, enabling merchants and financial institutions to interact more closely with customers and deliver additional value (e.g., loyalty, offers)

## New Entrants Have An Edge On Technology, But Distribution Remains A Key Hurdle

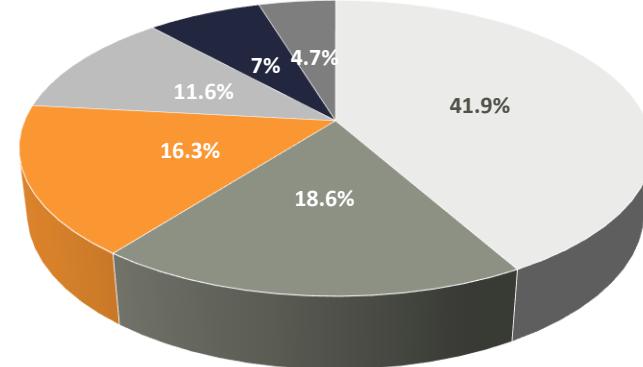
- Merchant acquirers and ISOs do not see lower pricing as the greatest competitive advantage for new entrants. Instead, 36% of respondents believe that new entrants have better technology than existing incumbents. That said, 24% and 14% of respondents highlighted transparent pricing and lower pricing as key advantages. Clearly, new entrant pricing strategies could have a transformative impact on prevailing industry pricing, translating into more transparent (cost-plus or fixed pricing) or lower fees over time.
- On the other hand, 42% of participants found distribution to be the biggest hurdle for new entrants. This was followed by pricing (18%) and security concerns (16%). New entrants might find it difficult or costly to scale and reach wide merchant adoption without partnering with incumbents (which can give new entrants access to existing merchant clients). Moreover, incumbents appear willing to embrace such partnerships as well.

What are some of the competitive advantages that new entrants have against traditional acquirers?



■ More Services ■ Lower Pricing ■ Other ■ Transparent Pricing ■ Better Technology

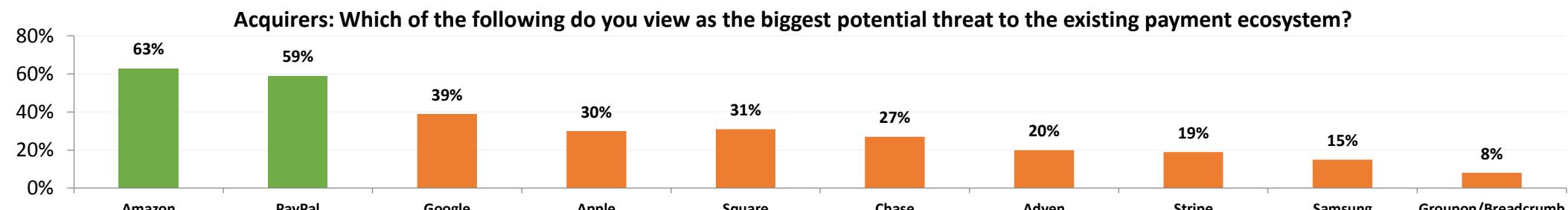
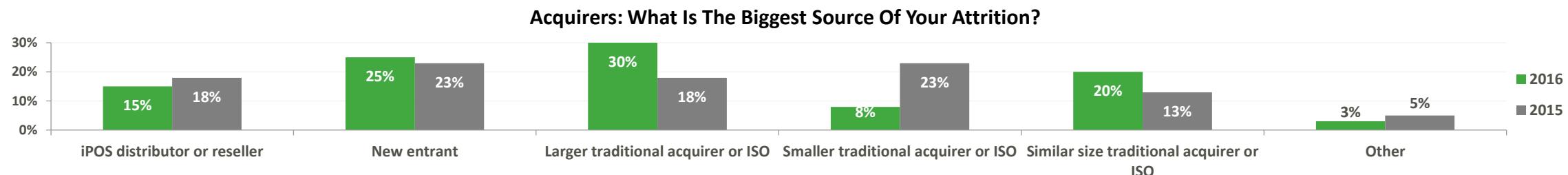
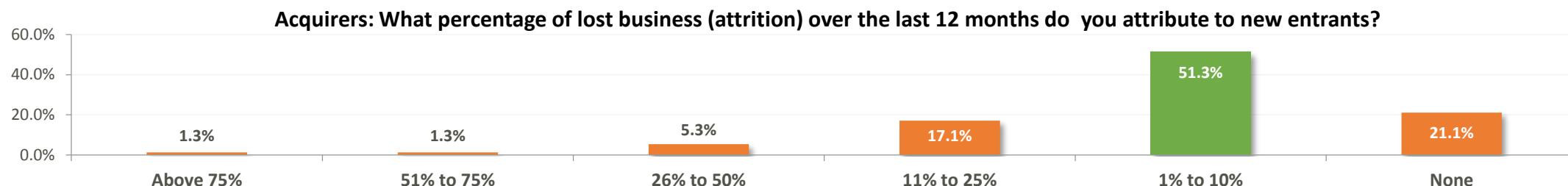
What is the biggest hurdle that new entrants face when competing against traditional acquirers?



■ Distribution ■ Pricing ■ Security ■ Other ■ Technology ■ Regulation

## New Entrant Impact On Attrition Remains Minimal

- New entrants are still a minimal portion of total industry attrition. Only a small handful of acquirers suggest that new entrants are driving a meaningful portion (over 25%) of their recent merchant attrition. Thus, the majority of merchant attrition is likely still due to traditional competition and involuntary attrition (i.e. business bankruptcies/closures). Though it is still early, the results likely reflect that (1) limited success in new entrants' efforts to gain share in the core SME segment of the market thus far or (2) a positive impact from incumbents' mitigation strategies.



Source: Goldman Sachs

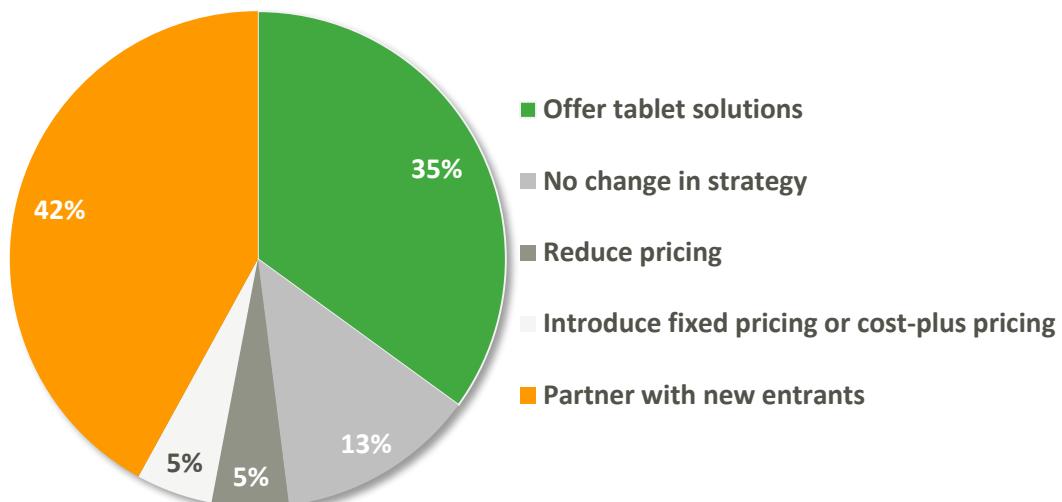
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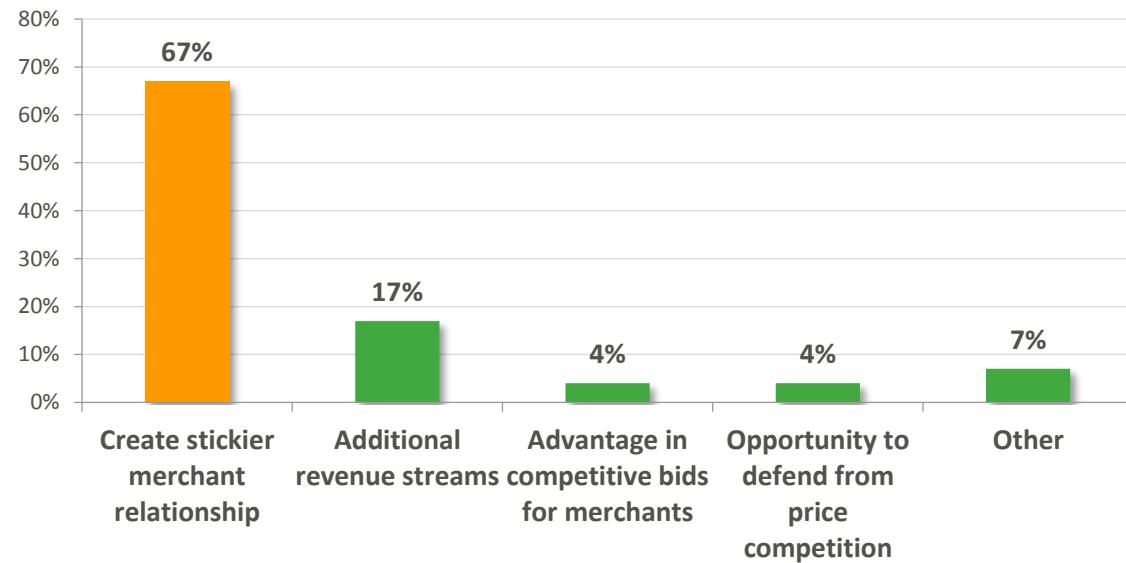
## Mitigation Strategies: Partnerships, Value-added Services Are Key

- Most acquirers prefer to partner with new entrants in order to enhance offerings to merchants, while about a 1/3<sup>rd</sup> appear interested in developing and offering their own tablet/smartphone based solutions. At the other end of the spectrum, a small amount of acquirers expect to reduce pricing in order to compete against new entrants. This suggests that pricing could serve as a last resort for acquirers and ISOs to protect market share. Instead, merchant acquirers will likely focus on adding value to their merchant clients to defend their turf.

What is your strategy to adapt to the new competitive environment?



How do you expect to benefit from offering value added services for merchants?





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# PAYMENTS INDUSTRY GLOSSARY



## Industry Terms and Definitions

The Payments Industry, like all other industries, has its own unique set of terms and acronyms. TSG has attempted to define as many of the terms used throughout the document to explain their meaning.

### A

- **ABA (American Bankers Association) Routing Number:** Also referred to as a Routing and Transit Number. Directs electronic ACH deposits to the proper bank institution.
- **ACH (Automated Clearing House):** The paperless funds transfer system maintained by the Federal Reserve or other entities that have networks to exchange electronic funds transfer items.
- **ACH Network:** A central distribution and settlement point for electronic items exchanged among depository financial institutions.
- **ACH Operator:** A central clearing facility, operated by a Federal Reserve Bank or a private sector organization on behalf of depository financial institutions, in which participating financial institutions transmit or receive ACH entries.
- **Acquirer:** a Bank or processor that provides an in-house processing platform (front-end and/or back-end), other product technology, back-office services and sales functions for its own acquiring needs
- **Acquiring Processor:** A processor provides credit card processing, billing, reporting, settlement, and operational services to the acquirer/independent sales organization.
- **Address Verification Service (AVS):** A service provided in which the Seller verifies the Cardholder's address with the issuing bank. Address verification is not a guarantee that a transaction is valid.
- **Adjustment:** A Debit or Credit to a Cardholder or Seller account to correct a transaction error.
- **Alliance:** An Acquiring partnership between a Financial Institution and a transaction processor. Both parties agree to split the operational and sales functions of an Acquirer, jointly manage the business and share in the profit/loss based on their ownership percentage.
- **AML:** Anti Money Laundering
- **Amount:** This represents the total amount that was submitted for authorization. This is equivalent to the authorization amount or payment amount of a transaction.
- **Arbitration:** The process followed by the Card Networks to determine whether an Issuer or an Acquirer has ultimate responsibility for a chargeback. Either member initiates this process after the re-presentment process is completed.
- **Assessments:** Fees paid quarterly by members to VISA and Mastercard to support marketing and operating activities.
- **ATM Interchange Fee:** The fee paid to the Acquirer Member by the Issuer Member for a DEBIT ATM Transaction as established from time to time by the DEBIT Network.
- **ATM System:** The telecommunications and processing system operated by or on behalf of an Acquirer Member to process ATM transactions initiated through the Acquirer Member's ATMs. The ATM System includes all elements of the processing system from the ATM or POB Terminal to the interface with the ATM Switch.



## Industry Terms and Definitions

- **Authentication:** The process whereby the actual identity of a party is verified by means of providing secret information to the validating agent. The secret information is assumed to be known only to the party and the validating agent.
- **Authorization:** The process of verifying that a credit card has sufficient funds to cover the amount of the transaction. An approval response code is sent to the merchant from the card issuer that verifies availability of credit or funds on the cardholder account.
- **Authorization Code:** The code assigned to the transaction once it has been approved by the processor.
- **Authorized/Pending Capture:** These transactions have been approved by the authorizer but have not yet settled. Transactions in this state have been authorized only and will not be settled until a capture action is performed against the transactions. These transactions will remain in an unsettled state until the capture action is performed.
- **Average Ticket:** The average size of a payment card transaction at a merchant. Generally used in pricing decisions and calculations.

## B

- **Back-end Processor:** A data processing company that contracts with Acquirers to provide communication and processing systems that connects with the interchange systems for clearing and settlement services on behalf of those Acquirers. (In some cases, the Acquirer may act as its own back-end processor.)
- **Bankcard:** Any valid card issued by a card-issuing organization that is presented in payment for goods and services or to obtain cash advances.
- **Bank Account Number:** The number of a bank account provided for a given transaction. For any eCheck charge or refund transaction, a full bank account number must be provided.
- **Bank Account Type:** This indicates the type of bank account provided by a customer for an eCheck transaction. The valid values for this field are Checking or Savings.
- **Bankcard Association:** A group of institutions formed for sponsoring a bankcard program, using a common processing and administrative center.
- **Banking Business Day:** That part of any day on which a Financial Institution Member is open to the public for carrying on substantially all of its business functions, and which is not a legal holiday.
- **Basis Points:** A unit of measure used commonly in the financial industry when discussing interest rates and interchange rates where differences of less than one percent are common; one hundredth of a percentage point.
- **Batch Processing:** A type of data processing and data communications transmission in which related transactions are grouped together and transmitted for processing, usually by the same computer and under the same application.
- **BIN (Bank Identification Number):** A unique six-digit number to identify processors, acquirers, issuers and other financial institutions involved in the interchange process; it is the first six digits of the cardholder's account number. Also known as Issuer Identification Number (IIN).
- **Billbacks:** When a merchant processes a transaction, the transaction typically clears at an assigned interchange level (e.g., eCommerce Basic), which is usually the interchange level at which it was priced or at the interchange level where the majority of the merchants transactions typically clear. When a transaction clears at a different interchange level other than where the merchant is priced, the merchant is charged or credited at the difference between the clearing interchange rate and the priced interchange rate. This is called a "billback".



## Industry Terms and Definitions

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- **Biometrics:** As it relates to the Payments space, biometric technology allows for card-less transactions by using a fingerprint, eye scan, or other biological identifier. Your finger image securely links you, and only you, to your accounts using the secure method of finger scanning at check out – completely eliminating the need to carry cards, checks or cash.
- **Bitcoin:** A decentralized digital currency
- **BSA:** Bank Secrecy Act
- **Bug:** The logo's of various debit networks that appear on the back of most Signature and PIN Debit cards. It is recognized in the processing hierarchy and assists in the proper routing of some debit transactions.

## C

- **Capture:** An action in which an electronic credit card sale transaction is submitted for financial settlement. Authorized credit card sales must be captured and settled in order for a merchant to receive credit for their sales and a cardholder's account to be debited/credited.
- **Captured/Pending Settlement:** Transactions with this status have been approved, captured and are awaiting settlement. These transactions will be submitted for settlement according to the transaction cut off time associated with the merchant account.
- **Card Networks:** Corporations that connect consumers, businesses and financial institutions to transact through electronic payments instead of cash and checks. Major U.S. brands are American Express, Discover, Mastercard, and Visa.
- **Cardholder:** A person or entity that is issued a credit or debit account that is accessed through the use of a card.
- **Card-not-Present Transaction:** Credit or debit card transactions in which the card is not physically present, from the merchant's perspective, at the time of the actual transaction; e.g. eCommerce (internet) and mail/phone order transactions.
- **Certificate Authority (CA):** A trusted entity that performs the PKI functional roles of certificate issuer, certificate manufacturer, registrar and repository. The CA appends the certificate issuer's identity to the issued Digital Certificate and a Digital Signature using their Private Key. The Digital Certificate of the CA may be retrieved based upon the identity and its Public Key used to authenticate the issued Digital Certificate.
- **Certification:** The successful completion by a Member or Processor of the testing of its Interface to the Debit Switch under the Technical Specifications and proof of capability to process all required Transactions in the Debit Network in accordance with the Debit Rules.
- **Chargeback:** When a credit card transaction is disputed (either at the request of the Cardholder or by a card Issuer), the dispute is handled through a chargeback. A chargeback will cause the amount of the original sale and a chargeback fee to the checking or savings account of the merchant.



## Industry Terms and Definitions

- **Chargeback Period:** The number of calendar days (counted from the transaction processing date) during which the issuer has the right to charge the transaction back to the acquirer. The number of days varies according to the type of transaction from 45 to 180 days.
- **Chargeback Reason Code:** A numerical code, which identifies the specific reasons for the chargeback. VISA and Mastercard each have their own chargeback codes.
- **Chargeback Reference Number:** A 10-digit number assigned to every chargeback, unique (in a 12-month period) for each individual chargeback. The first four digits of the chargeback reference number are the issuer's identification (BIN/ICA) number.
- **Check Guarantee:** A service provided by a third-party vendor who guarantees a customer's payment by check for a specified amount. Stipulations require that the merchant follow correct authorization procedures.
- **Check Verification:** A service provided in which a merchant accesses a national negative file database through their terminal/register to verify or authorize the person has no outstanding bad check complaints at any of the member merchants. This is not a guarantee of payment to the merchant.
- **Chip Cards:** Also known as EMV cards. A type of credit/debit card with a computer chip embedded into it. Chip cards make in-person transactions more secure, but may shift the focus of fraud efforts to card-not-present transactions.
- **Clearing:** The transfer of data between Issuers and Acquirers.
- **Compliance:** The procedure a VISA or Mastercard member may use to resolve a dispute between members when no chargeback reason code applies. The challenging member must prove financial loss due to a violation of Mastercard and/or VISA rules by the other member.
- **Communication Error:** Transactions of this status experienced an error connecting to the processor. These transactions are not re-submitted or sent for settlement.
- **Contactless Payments:** The term used to describe tools intended to verify that the person making the transaction is actually the person authorized to do so, in both in-person and card-not-present transactions.
- **Control Number:** Number that uniquely identifies a retrieval request or chargeback.
- **Credit Card Number:** The number on the credit card provided for a given transaction. For any charge or refund transactions against a credit card, the credit card number must be provided. In the case of refund transactions, the first four and last four digits may be provided in lieu of the full number.
- **Credit/Pending Settlement:** Transactions of this status have been entered as credits, but have not yet been submitted for settlement. These transactions will remain in this unsettled state until they are submitted for settlement. Once a credit has been settled, its status changes to Credited.
- **Currency:** The currency associated with the amount of a transaction.
- **Customer ID:** This is an internal identifier for a customer that may be associated with the billing information of a transaction. This field may contain any format of information.
- **CVV2/CVC2:** These are terms used by Mastercard and Visa respectively for the codes printed on the cardholder signature panel following the full or partial account number as a security feature. When provided by the cardholder and contained in the authorization record, it allows the issuer to verify the physical presence of the card. Merchant has re-presentment rights and additional protection for specific chargeback codes when issuer approves and authenticates this value.
- **CVV2 Status:** This value indicates the level of match between the CVV2 code entered on a transaction and the value that is on file with a customer's credit card company. A code and narrative description are provided indicating the results returned by the processor.



# Glossary

## Industry Terms and Definitions

### D

- **Data Breach:** Unintentional release of secure information to an untrusted environment.
- **Data Capture (a/k/a Draft Capture):** The collection, formatting, and storage of information in computer memory. Some point-of-sale terminals perform data capture functions.
- **Data Encryption Algorithm (DEA OR 3DEA):** The cryptographic algorithm as defined in ANS X3.92-1987, Data Encryption Algorithm and updated in ANS X9.52-1998, Triple Data Encryption Algorithm Modes of Operation. It is the only cryptographic method approved for use in the DEBIT Network for PIN and key Encryption.
- **Data Encryption Key (DEK):** Used for the encryption of message text and for the computation of message integrity checks (signatures).
- **Data Encryption Standard (DES):** The NIST Federal Information Processing Publication (FIPS Pub. 46) standard, which defines the use of the Data Encryption Algorithm. The cryptographic method used by the DEBIT Network for data Encryption.
- **Data Security Standard (DSS):** PCI-DSS (Payment Card Industry Data Security Standard). Common standards for merchants and third parties resulting from the alignment of Mastercard, Visa and other card associations with the similar goal of protecting payment card account data wherever it is received or stored.
- **Database:** A collection of data organized and designed for easy access i.e., a collection of customer names and addresses.
- **Debit:** A charge to a customer's bankcard account.
- **Debit Card:** Any card that primarily accesses a Deposit Account.
- **Debit Transaction:** A bankcard used to purchase goods and services and to obtain cash, which Debits the cardholder's personal deposit account.
- **Decline or Declined:** The denial of an Authorization Request by, or on behalf of, an Issuer Member.
- **Decryption:** The process of changing data (usually the PIN block) from cipher text to clear text.
- **Demand Deposit Account (DDA):** Usually abbreviated as DDA, it refers to the merchant bank account Processor credits or Debits for deposits, fees and adjustments.
- **Deposit Account:** An Access Account, other than a Credit Account, maintained by a Member for processing transactions. Deposit Accounts include checking, NOW, savings, share draft, and such other depository accounts as are legal under Applicable Law.
- **Deposit Processing Day:** The period during which a Member processes deposits made on a given Business Day pursuant to these Rules. That period may occur on a single Business Day or may begin on one Business Day and end on a second Business Day.
- **Deposit Service:** The deposit of currency and other eligible items at a DEBIT ATM for credit to an Access Account of a DEBIT Cardholder maintained with an Issuer Member, and processing, Settlement and Adjustment with respect to such deposits.
- **Derived Unique Key Per Transaction (DUKPT):** In cryptography, a key-management technique that uses a unique key for each separate transaction to prevent the disclosure of any past key used by the transaction-originating tamper-resistant security mode (TRSM). *Note:* The unique transaction keys are derived from a base derivation key using only non-secret data transmitted as part of each transaction. This encryption method is used by Debit Networks to protect transaction data.
- **Digital Certificate:** An electronic message that at least (i) identifies the Certificate Authority issuing it, (ii) names or identifies an Account Holder, (iii) contains the Account Holder's Public Key, (iv) identifies its operational period, and (v) is digitally signed by the Certificate Authority issuing it. Digital Certificates may be used as Authentication Tokens in eSign Authentication Program and Retail ID Authentication Program Authentication.



## Industry Terms and Definitions

- **Digital Signature:** A transformation of an electronic message using an asymmetric cryptosystem and a hash function such that a person receiving the initial message and an Account Holder's Public Key can accurately determine: Whether the transformation was created using the Private Key that corresponds to the Account Holder's Public Key; and Whether the initial message has been altered since the transformation was made.
- **Digital Wallet:** Digital wallets allow consumers to shop online and pay using a wallet system, rather than entering a credit card for each purchase. Wallets typically use a user name and PIN or other security device to authenticate the buyer.
- **Direct Payment:** A method of collection used in the ACH network claims, generally those that are repeated over a period, under which the debtor gives the originator a standing authorization to Debit his or her account.
- **Direct Processor:** A Processor whose telecommunications connection goes from the Processor's mainframe or front-end computer directly to the Switch.
- **Disclosure:** The information required by federal or state law to be relayed to the cardholder concerning the terms of the credit agreement. Disclosure must be made by the issuer before the first use of the card by the cardholder, and must subsequently be included on all monthly statements and other documentation mentioning finance charges.
- **Discount Rate:** A discount rate is a fee associated with collecting, assessing, approving, processing, and settling credit card transactions. This fee is often a percentage of the transaction value.
- **Dispute Resolution:** The process that takes place once a Chargeback is generated.
- **Doing Business As (DBA):** Refers to the specific name and location of the merchant establishment where credit card purchases are made.
- **Down Time:** A period when all or part of a system or network is not available to end users due to failure or maintenance.
- **Downgrade:** A term used to describe a credit card transaction that does not meet the requirements for proper interchange qualification and thus is charged a higher interchange rate.
- **Dual Control:** A process of utilizing two or more separate entities (usually persons), operating in concert, to protect sensitive functions or information (i.e., cryptographic key) whereby no single entity is able to access or utilize the functions or information.
- **Duality:** The membership of a financial institution in both Mastercard and VISA. Legality outside of the U.S. varies according to nation.

## E

- **eCheck:** The electronic equivalent of a paper check, often used to conduct transactions over the internet.
- **eCommerce:** Internet-originated transactions. Also, the use of the internet for commercial purposes such as banking, shopping, or purchases of financial services and products.
- **Electronic Banking:** A form of banking in which funds are transferred through an exchange of electronic signals between financial institutions, rather than an exchange of cash, checks or other negotiable instruments.
- **Electronic Benefits Transfer (EBT):** The provision of government entitlement programs to those individuals who are entitled to receive such entitlements or benefits through the use of magnetically striped or other cards capable of storing information regarding cardholders and capable of accessing ATM and POS Terminals to receive distribution of such entitlements or benefits.



## Industry Terms and Definitions

- **Electronic Bill Delivery:** A bill delivery system offered by Visa Interactive that allows banks to send consumers their bills through their personal computers or via telephone lines. This system now allows consumers to transfer funds through their bank to the billing agent itself.
- **Electronic Bill Payment (E-pay):** An alternative to paper checks for paying bills. Consumers can use PCs, telephones, screen phones or ATMs to send electronic instructions to their bank or bill payment provider to withdraw funds from their accounts and pay merchants. Payments may be made either electronically or by a paper check issued by the bill payment provider.
- **Electronic Bill Presentment (EBP):** The electronic delivery of vendor requests for payment. Vendors send consumers their bills via PCs, telephones or screen phones.
- **Electronic Cash Register (ECR):** A system, which functions most efficiently and effectively for large businesses with many registers in single or multiple locations. Provides a direct, computer-to-computer linkup between the Processor host and the merchant's host.
- **Electronic Check Acceptance(SM) or ECA:** A system that captures banking information off a paper check and converts it into an electronic item processed through the Automated Clearing House network. With ECA, checks are processed similarly to credit cards, and the paper check is returned to the consumer at the point of sale.
- **Electronic Data Interchange (EDI):** The electronic communication of business transactions; specifically the exchange of trade-related documents, such as purchase orders, invoices and corporate Electronic Funds Transfer (EFT's) in a standard format. With EDI, electronically transmitted data replaces paper documents in the business accounts receivable cycle.
- **Electronic Draft Capture (EDC) Terminal:** Also referred to as Electronic Data Capture terminal. A point-of-sale device that reads information encoded in the bankcard's magnetic stripe, performs authorization functions, stores transaction data, and batches and transmits that data to the acquirer for processing. The stored transactions are used to create settlement files and transaction reports.
- **Electronic Financial Services (EFS):** Financial services that are provided via electronic delivery channels (e.g. PCs, telephones, screen phones and ATMs). These services may be transaction and/or information oriented and may be provided by bank and non-bank providers.
- **Electronic Funds Transfer (EFT):** A transfer of funds between accounts by electronic means rather than conventional paper-based payment methods. EFT is any financial transaction originating from a telephone or electronic terminal, or from a computer or magnetic tape.
- **Electronic Funds Transfer at the Point of Sale:** The technology and practice of making payments for goods and services by means of electronic funds transfer initiated at the point where goods and services are purchased.
- **Electronic Point of Sale:** A point-of-sale merchant with electronic equipment for pricing and recording transactions, but not necessarily incorporating functions for electronic funds transfer.
- **Eligible Deposit:** U.S. currency, checks and money orders payable in U.S. currency and drawn on or payable by a bank, savings bank, savings and loan association or credit union, or branch thereof located in the United States, and deposited for credit to a Debit Cardholder's Deposit Account. Foreign (non U.S.) currency and items payable in foreign (non-U.S.) currency, items drawn on or payable by an institution or other person located outside the United States, items with passbooks attached, photocopies, certificates of deposit, banker's acceptances, and nonnegotiable writings are not Eligible Deposits. Returned or canceled checks or drafts are not Eligible Deposits.
- **Eligible Non-U.S. Country:** A foreign (non-U.S.) country, which has been approved as a country in which International Members may be headquartered and under whose laws an International Member, may be organized.
- **Embossing:** The process of printing data, in the form of raised characters, on the bankcard. Provides identification of the card and allows the imprinting of sales drafts.



# Glossary

## Industry Terms and Definitions

- **EMV (Europay-MasterCard-Visa):** Also known as chip cards. A type of credit/debit card with a computer chip embedded into it. EMV cards make in-person transactions more secure.
- **Encryption:** The technique of scrambling data automatically in the terminal or computer before data is transmitted for security/anti-fraud purposes.
- **Encryption Keys:** A mathematical value that is used in an algorithm to transform clear text to cipher text and cipher text to clear text. For definitions of specific keys, such as Master File Key and Zone Control Master Key, refer to Appendix J of these Rules and ANS X9.24.
- **Encryption Service Organization (ESO):** An ESO is an organization or individual that is not a Member or Processor of the DEBIT Network but that provides services to a Member that include: (i) loading software into a DEBIT Terminal or DEBIT Internet Device; (ii) loading or injecting Encryption Keys into PIN Pads, DEBIT Internet Devices, or Authentication Tokens; (iii) providing merchant help desk support which includes reprogramming of terminal software, programming of DEBIT Internet Merchant Web sites and/or Internet Payment Screens; or (iv) providing DEBIT Account Holder help desk support, including but not limited to assisting DEBIT Account Holders with their DEBIT Internet Devices.
- **End-to-End Encryption:** Uninterrupted protection of the integrity and confidentiality of transmitted data by encoding it at the start and decoding it at the end of the transaction.
- **Enveloping:** A process whereby documents of the same type or purpose are grouped together, bound, and sent to the same destination into an electronic envelope. This is done by an electronic data interchange management software function.
- **eSign Authentication Program:** An Authentication Program supported by the DEBIT Network for DEBIT Internet Transactions whereby the Account Holder initiates DEBIT Internet Transactions using an Account Holding Member issued Authentication Token, and the Authentication Token is authenticated by the Account Holding Member.
- **Exception Fee:** A fee established by the DEBIT Network from time to time to cover the administrative expenses associated with exception processing.
- **Exception Item:** An Adjustment, Chargeback, or Representment initiated in accordance with these Rules to correct a DEBIT Transaction processing error or a disputed DEBIT Transaction.
- **Expiration Date:** The date embossed on a bankcard, beyond which the card becomes invalid.

## F

- **Facsimile Draft:** A paper record that may be provided by an acquirer as a substitute for the sales draft. A substitute document.
- **Factoring/Laundering:** The coercion/bribery of a merchant to process another merchant's transactions (often fraudulent) for payment.
- **FDIC:** Federal Deposit Insurance Corporation
- **Financial EDI:** Electronic exchange of payments, payment information or financially related documents in standard formats between business partners.
- **Financial Institution:** Any organization in the business of moving, investing, or lending money, dealing in financial instruments, or providing financial services. Includes commercial banks, thrifts, federal and state savings banks, saving and loan associations, and credit unions.
- **FINCEN:** Financial Crimes Enforcement Network
- **Floor Limit:** A dollar amount set by the acquirer in accordance with Mastercard and VISA rules and regulations. The merchant must obtain authorization for any transaction over the floor limit.



## Industry Terms and Definitions

- **Folio:** A lodging merchant's guest file that contains the cardholder's transaction information, including check-in and out dates, rate, intended length of stay at check-in time, applicable charges and taxes.
- **Force / Offline Transaction:** The after-the-fact entry of a purchase resulting from a referral ('call Authorization Center') message or a downtime interruption of service from a Network, which enables the merchant to enter (as a force/post authorization) the transaction and the approval code into the EDC batch.
- **Foreign Authorization:** An authorization that is processed on a front-end that is not associated with the Back-end processor. Example: an acquirer utilizes Global Payments for some of the Authorization services but FDMS is their Back-end Processor.
- **Franchise:** An organization that grants a license to a merchant, group of merchants or a financial institution to market a company's goods or services in a particular territory, and wants to provide bankcard processing to its members and/or customers.
- **Fraud:** The crime of using dishonest methods to take something of value from another person or entity. Fraudsters dupe and deceive consumers to commit fraud (steal their identity or credentials).
- **Front-end Processor:** A company/vendor that provides communication and data processing services for authorization of card payments and the transfer of data between merchants point of sale equipment to the back-end clearing and settlement processor. Examples of Front-end processors are TSYS and First Data (Nashville, CardNet and ETC).
- **FTC:** Federal Trade Commission
- **Fulfillment:** The acquirer's response to an issuer's retrieval request for a sales draft. The acquirer supplies the issuer with the original draft or a clear reproduction. The fulfillment record confirms the response and initiates reimbursement to the acquirer for fulfilling the request.
- **Full Service Processing (FSP):** A relationship with a Bank whereby Processor provides a broad series of services on an outsourcing basis. Processors are paid fees for the services performed and do not hold the risk for Credit/Fraud losses.
- **Funding:** Refers to the payment to a merchant for his submitted deposits.
- **Funding Account:** A non-specific account type in a Transaction request when the Cardholder/Account Holder does not select the specific account against which the Transaction is to be processed. Also referred to as 'no account specified'.
- **Funds Settlement Account:** A Deposit Account maintained by a Processor or Member at a financial institution for purposes of Settlement of DEBIT Transactions.

## G

- **Gateway:** An intelligent application that routes payments transactions, often from shopping cart/terminal to processors.
- **Gift Cards:** A magnetic stripe or smart (chip) card that replaces paper gift certificates that are most often used in retail, restaurant and lodging establishments.
- **Gross Deposit:** Submitting bankcard sales and credits at the face amount. The acquirer later deducts the discount.



# Glossary

## Industry Terms and Definitions

### H

- **Hacker:** A person who uses computers to gain unauthorized access to data, or a person who seeks and exploits weaknesses in a computer system or network.
- **Host Capture:** A type of authorization system that captures the authorization information necessary to perform settlement using a master settlement file—the information is captured and maintained at the host level without having to poll store-level files.

### I

- **ICA (Interbank Card Association Number):** A four-digit number assigned by Mastercard to a financial institution, third party processor, or other member to identify the member in transactions.
- **Independent Sales Organization (ISO):** An organization whose primary mission is a merchant sales function and may provide some limited additional functions such as back-office customer services
- **Interchange Network:** An electronic network maintained by Discover, Mastercard, American Express, or VISA that exchanges data relating to the value of card sales and credits among Issuers and Acquirers.
- **Interchange Fees:** Fee paid (percentage of each transaction) by the acquirer to card issuing banks. Covers cost of fraud, accounts paying off monthly balances, etc. Mastercard and Visa have multiple interchange fees, based on card type, merchant type and market data requirements; covers the risk of loss and the cost of processing the transaction.
- **ISA:** An Independent Sales Agent is an individual whose primary purpose is to sell acquiring services to merchants. ISA's typically contract with a larger ISO or MSP, pass the account on to one of those organizations and collect a residual payment based on pricing and merchant performance
- **Issuer:** Any American Express, Discover, Mastercard or Visa member, or a commercial organization that establishes and maintains customer credit lines that are accessed through the use of a card. (Also public and private companies and financial institutions that offer card-accessed lines of credit to consumers and businesses.)

### K

- **Knuckle-buster:** Old fashioned credit card reader.

### L

- **Liability Shift:** As of October 1<sup>st</sup>, 2015, the liability for counterfeit card fraud losses, which previously was largely the responsibility of card issuers, will shift to merchants and their acquirers, unless both parties implement chip card processing capability.
- **Link:** A data communication circuit provided by a common carrier, including communications equipment at each Node, which provides a single interface to the DEBIT Network. A multiplexed circuit can provide multiple Links.



# Glossary

## Industry Terms and Definitions

### M

- **Magnetic Information Character Recognition (MICR):** Imprinted banking numbers (routing/transit number, checking account number, and check number) at the bottom of the check.
- **Magnetic Stripe:** A stripe (on the bankcard) of magnetically encoded cardholder account information affixed to a plastic card.
- **Mail Order / Telephone Order (MO/TO):** The direct marketing catalog industry.
- **MATCH:** A shared database maintained by the Card Associations that lists all Sellers terminated for cause by Acquirers.
- **MCC Codes:** Special numbers assigned by the Card Networks to merchant types for identification and tracking purposes.
- **Merchant:** A retailer, or any other person, firm, or corporation that, according to a Merchant Agreement, agrees to accept credit cards, Debit cards, or both, when properly presented.
- **Merchant Agreement:** The written contract between merchant and acquirer who detail their respective rights, responsibilities, and warranties.
- **Merchant Number:** A number that numerically identifies each merchant to the merchant processor for accounting and billing purposes.
- **Merchant Outlet:** The location of a merchant at which a transaction is consummated.
- **Merchant Service Charge:** The discount rate or other fees assessed by the acquirer.
- **Merchant Settlement Amount:** The net dollar amount for each business day of card transactions processed, less chargeback is debited to the merchants and other Debits or credits to the merchants.
- **Merchant Station Plate:** A metal embossed plate to be attached to the imprinter machine and used for imprinting sales slips and batch headers/summaries. Embossed data includes merchant name, account number, city, state, and may include service entitlement numbers or checking account number. Also known as a 'slug.'
- **Merchant Store and Forward Transactions:** DEBIT Transactions that cannot be authorized by or on behalf of the Issuer Member due to technical malfunctions and that are stored in a POS System for later forwarding to the Issuer Member.
- **Merchant Support:** The ability to handle and resolve incoming calls from merchants related to their day to day processing issues.
- **Merged Member:** A Depository Financial Institution that becomes a Member as a result of (i) its consolidation or merger with an existing Member, (ii) a purchase of its business and assets by an existing Member, or (iii) a purchase of the business and assets of an existing Member by such Depository Financial Institution.
- **Message Authentication Code (MAC):** The result of passing a digital message or a set of data content through an algorithm and a Secret key to produce a unique code for every digital message. The recipient can use the same algorithm and securely held Secret key to confirm that the data content has not been altered in communication from the point of origin.
- **MICR Number Method:** A check authorization procedure that uses the bank routing/transit numbers, checking account numbers and check number encoded along the bottom of the check.
- **Mobile Commerce:** Business that is conducted on the internet with mobile phones or other wireless hand-held devices.
- **Mobile Payments:** Using a mobile phone to pay for a wide range of services, digital and hard goods. Mobile payments can be made using direct operator billing (or WAP billing) allows the charges to be added to the user's mobile bill. Mobile payments can also be made using a credit card or mobile wallet.



## Industry Terms and Definitions

- **MSP:** A Merchant Service Provider is an organization that not only sells merchant accounts but also provides customer service and support to those accounts. For the purposes of this document an MSP will be considered a large ISO that contracts directly with a processor and supports a large number of ISA and ISO relationships. An MSP would possess considerable infrastructure and have the ability to service sub organizations in much the same way as a traditional Bank/Acquirer.

### N

- **NFC (Near Field Communications):** Set of standards for smartphones and other devices to establish radio communications with each other by touching them together or bringing them into close proximity (usually no more than a few inches).

### O

- **Offline Debit:** Debit card transactions using a VISA/Mastercard branded card that looks like a credit card. The transaction must adhere to VISA/Mastercard Debit regulations and the merchant is required to pay a discount fee. Cashback is not available.
- **On-Us Entries:** Financial institution Debit and credit entries to accounts held at the same institution. Such entries are posted internally to the appropriate accounts.
- **On-Us Transaction:** Any electronic banking transaction in which the acquirer and the issuer are the same institution.
- **Online Debit:** Debit card transactions that are instantly debited from the cardholder's bank account. No signature is required. A pin pad is required at the point of sale. Cashback is available and the funds are guaranteed.
- **On-Line Transaction:** A Debit Transaction that is input by a Cardholder using his or her PIN and that is processed and posted to the Debit Cardholder's Account at the time of approval by the Issuer Member.
- **On-Premises ATM:** An ATM located on or within five hundred (500) feet of the premises of a branch location of a Member that owns or sponsors such ATM.
- **Open-to-Buy:** The difference between the credit limit assigned to a cardholder account and the present balance on the account.
- **Operating Procedures:** The current manual prepared by an acquiring processor, containing operational procedures, instructions and other directives relating to card transactions.
- **Operating Risk:** The sum total of cumulative chargeback risk exposure plus the cumulative credit risk exposure with a given merchant.
- **Operating Rules:** Rules and business practices meant to increase consistency and interoperability among the various financial service providers that will interact with each other and end-users. Examples of operating rules include: authorization procedures, settlement timing requirements, audit and accounting rules, and credit limits.
- **Original Draft:** The actual bank copy of the form used in the transaction. Also referred to as the 'hard copy.'
- **Originator:** A financial institution that initiates a wire transfer or automated clearing house (ACH) payment.



## Industry Terms and Definitions

### P

- **Partial Reversal Status:** In the case of a prior authorization capture transaction, a partial reversal may apply. This value indicates the success of the partial reversal transaction.
- **Payment Amount:** The amount of a transaction submitted for authorization. This is the amount authorized against the specified payment method.
- **Payment Gateway:** An Internet-based service that transports credit card information from a computer terminal or Web site to a credit card processor, where it can be verified and processed.
- **Payment Method:** The form of payment provided against a transaction. In the case of credit card charges or refunds, the payment method reflects the type of credit card. In the case of eCheck transactions, the payment method would be eCheck indicating that a consumer's bank account has been charged or refunded. All transactions entered through the system must contain a valid payment method.
- **PCI DSS (Payment Card Industry Data Security Standards):** Common standards for merchants and third parties resulting from the alignment of Mastercard, Visa and other card associations with the similar goal of protecting payment card account data wherever it is received or stored.
- **PIN (Personal Identification Number):** A number that is assigned to consumers to identify them when they use debit cards at an ATM, point-of-sale device or a home device. Also used with some credit cards.
- **Pass Through:** Transactions that are processed by Processor for statement purposes, but are not funded by Processor (i.e., American Express).
- **Physically Secure Device:** A hardware device which, when operated in its intended manner and environment, cannot be successfully penetrated to disclose all or part of any cryptographic key or PIN information resident within the device.
- **Point-of-Sale (POS):** The location where a transaction originates between a cardholder and a merchant.
- **POS Interchange Fee (PIF):** A fee paid by a POS Acquirer Member to an Issuer Member, as a result of an authorized POS Purchase or Pre-authorization Completion Transaction made by a Cardholder at a DEBIT Merchant.
- **Private Label:** A retailer's proprietary card. Accepted only at that merchant's retail establishments.
- **Processor:** A member of Mastercard and/or Visa, or a Mastercard/Visa approved non-member acting as the agent of a member, that provides authorization, clearing or settlement services for merchants and members.
- **PSP (Payment Service Provider):** Company that provides merchants the ability to accept electronic payments. PSPs can connect to financial institutions, card and payment networks and manage relationships with them as a service to merchants.

### R

- **Radio Frequency Identification:** RFID is an automatic identification method, relying on storing and remotely retrieving data using devices called RFID tags or transponders. RFID technology is commonly used in POS Terminals at merchants that have small dollar transactions to speed the use of electronic payments methods.



## Industry Terms and Definitions

- **Reference Transaction ID:** This is the transaction ID that links transactions to an original or parent transaction. In the case of credit transactions, a reference transaction ID may be entered to link the subsequent credit to the original transaction within the system.
- **Recurring Billing Transaction:** A recurring billing transaction indicates that a similar transaction is submitted multiple times over a period of time. This flag is sent to the processor during authorization indicating that this is a recurring billing transaction.
- **Re-presentment:** The re-submission by an Acquirer of a previously charged back sale in an attempt to re-charge the Cardholder. Chargeback's require some form of additional documentation confirming the validity of the charge and disputing the original chargeback reason.
- **Reseller:** An organization that offers the services or products of a third-party that are in addition or complementary to other service offered by the reseller.
- **Retrieval Request:** A retrieval request occurs when your customer requests more information about a transaction that appears on his or her credit card statement.
- **Review Failed:** Transactions with this status have failed a risk review and will not be processed by the system.
- **Routing Number:** The number associated with an eCheck transaction that identifies the financial institution associated with a customer's bank account.

## S

- **Sales Draft:** The paper or electronic evidence of a purchase.
- **SARS:** Suspicious Activity Reports
- **Secure Payment Page:** A secure payment page assures customers that their payment information is encrypted for privacy and data integrity before it is sent over the Internet. This page is typically identified by the "s" in https:// (instead of http://). Payment gateway providers make this necessary e-commerce link possible by hosting the payment gateway software and individual secure payment pages on their own servers.
- **Seller Account or Online Seller Account:** The bank account a Seller identifies as the sole account from which monthly and/or transaction fees are debited.
- **Seller Bank:** (Acquirer or Processor) The financial institution with which a Seller contracts to accept credit cards for payment of goods and services.
- **Seller Fees or Fees:** Sellers are charged several types of fees for screening and processing online payments. Fees for products and services include, but are not limited to costs for the following: Monthly Online Seller Account, Discount Rate, Per item charges for credit card and electronic check transactions, and chargeback's
- **Seller or Online Seller:** An individual or business that sells products or services and is capable of accepting payment for products and services via a Seller account.
- **Settled Successfully:** Transactions with this status have been approved and successfully submitted for settlement. The charge or refund has been applied against the appropriate payment method. No further action may be taken against successfully settled transactions.
- **Settlement:** The process of transferring funds for sales and credits between Acquirers and Issuers, including the final Debiting of a Cardholder's account and crediting a Seller's account.
- **Settlement Amount:** The transaction amount sent to the processor for settlement. This amount will appear as a charge or refund against the specified method of payment. This amount may be less than or equal to the original authorization amount for the transaction.
- **Settlement Date/Time:** This date indicates the date/time on which a transaction was submitted for settlement. Only transactions that have been successfully settled will contain a settlement date.



## Industry Terms and Definitions

- **Settlement Error:** Transactions with this status have experienced an error during processing. These transactions have not been successfully settled.
- **SIC Codes (Standard Industrial Classification Codes):** The Standard Industrial Classification SIC is a system for classifying industries by a four-digit code. Established in the United States in 1937, it is used by government agencies to classify industry areas.
- **Smart Card:** Plastic card containing a computer chip with memory capabilities. Also known as a chip or EMV card.
- **Sponsor:** A Financial Institution Member that sponsors eligible Merchants, International Members, Internet Merchants, IAOs, ESOs, or ISOs, as applicable, into the Visa/Mastercard Association Networks.

## T

- **Tokenization:** The process of translating a credit card number into a random sequence of numbers as a method of encryption, to enhance credit card security during a transaction.
- **Transaction:** An act between a Seller and a Cardholder that results in either a paper or an electronic representation of the Cardholder's promise to pay for goods or services received.
- **Transaction ID (Trans ID):** Each transaction within the system is assigned a unique transaction ID. This ID may be used to sort or identify specific transactions within the system.
- **Transaction Status:** Each transaction within the system is given a unique status value to indicate the current processing state. A transaction status provides summary information regarding the state and subsequent actions that may be performed against a transaction. The following values may appear in the transaction status field: Authorized/Pending Capture, Captured/Pending Settlement, Credit/Pending Settlement, Declined, Voided, Credited, General Error, Communication Error, Settled Successfully, Under Review, and Review Failed.
- **Transaction Type:** This value indicates the type of transaction entered and actions that may be associated with the transaction.

## U

- **Unauthorized Transaction:** Any sale for which a Cardholder does not provide his/her specific authorization. (not to be confused with failure to receive an issuer authorization response)
- **Under Review:** Transactions with this status are currently being reviewed before being submitted for processing.

## V

- **VAR:** A Value Added Reseller (VAR) that sells third-party products/services and adds its own value such as service, installation, etc.
- **Verified by Visa:** Through the Verified by Visa checkout process, Visa card Issuers confirm consumers' identities in real time during transactions at participating merchant sites. When the consumer clicks "buy" at checkout, software installed on the merchant server recognizes registered Visa cards and the Verified by Visa screen automatically appears in the consumer's browser. The consumer enters his/her password and the password is verified.
- **Voided:** Transactions with this status have been marked as Void within the application. Transactions with this status will not be sent for settlement.

## Z

- **Zero Floor Limit:** Requires that all cardholder transactions be authorized

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