6TH ANNUAL

MOBILE PAYMENTS AND FRAUD

2018 Report

Executive Summary

The 2018 Mobile Payments and Fraud Survey marks the sixth consecutive year of this study. This year's report, with nearly 600 merchant respondents, is focused on understanding the growth, challenges and developments in the mobile channel. The report also set out to provide a better understanding of how the mobile market has evolved since the inaugural survey report in 2013. Specific highlights of the report, include:

- Seventeen percent of merchants today make at least half of their total sales in the mobile channel.

- Nearly one-third of merchants expect mobile to represent at least half of their total revenue by 2020.

- For the first time in the survey, there were more merchants with mobile apps for online shopping than those who offer a dedicated mobile website.

- The discrepancy between organizations with annual revenue over $250 million and those with less than $10 million continues to widen with respect to their support of the mobile channel.

- For the third consecutive year of the survey, merchants are showing signs of complacency in terms of fraud management capabilities.

- The use of machine learning (ML) in identifying and mitigating fraud has grown 13 percent since 2015.

As expected, there has been growth in mobile channel fraud that is in sync with the growth in mobile transactions. The share of merchants reporting an increase in mobile fraud attempts grew by nearly 50 percent this year, following a 70 percent year-over-year increase in the 2017 survey. Interestingly, despite the fact that mobile fraud continues to grow at a rapid pace, merchants once again show they have become complacent, and in some ways even regressed, with respect to their efforts and capabilities regarding mobile channel fraud management. Specifically:

- Just 17 percent of merchants surveyed apply separate fraud strategies to the desktop and mobile eCommerce channels. This lack of focus on securing mobile transactions is further represented in that only 50 percent believe it is important to have specialized tools for managing mobile channel risk today, down from nearly 75 percent two years ago.

- The share of merchants who are unable to recognize when a transaction is coming from a mobile device increased for the first time in the history of this annual survey, growing from 14 to 27 percent.

The 2018 report revealed that the use of multiple fraud prevention tools is slightly higher, however sometimes inadequate. About 11 percent of surveyed merchants do not apply any fraud prevention tools or techniques in the mobile channel while 83 percent use two or more tools and two-thirds of merchants use three or more. Although the average number of mobile fraud detection tools in use is up slightly from last year, two of the three most used tools are AVS (Address Verification Services) and CVV (Card Verification Value) checks, which do not provide adequate fraud protection by themselves.

Executive Summary

Not all organizations are created equal in terms of how they protect the mobile channel. A recurring trend throughout many years of the Mobile Payments and Fraud Survey is that there are multiple disparities between higher and lower revenue merchants in terms of the emphasis they place on mobile payments and mobile fraud detection. About 40 percent of merchants with annual revenue greater than $100 million support mobile wallets compared to 23 percent of merchants with revenue less than $100 million per year. The report found that merchants with annual revenue above $250 million are significantly more likely to offer mobile apps, whereas lower revenue merchants were more likely to support a dedicated mobile site for shopping and both were equally as likely to support desktop eCommerce.

Higher revenue merchants are more likely to say it is important to be able to detect mobile devices in transactions. Nearly 40 percent of merchants with annual revenue less than $10 million cannot detect mobile devices compared to just 12 percent of merchants with sales revenue above $250 million.

The disparities between higher and lower revenue merchants continue with their mobile fraud strategies. One-third of merchants earning more than $250 million in annual revenue have a dedicated mobile fraud strategy that differs from traditional eCommerce. This number is compared to just 9 percent of merchants with annual revenue less than $10 million. The highest revenue merchants use about 5 different tools or services for mobile channel fraud

detection, compared to less than 3 tools on average for merchants with annual revenue less than $10 million.

Specific information pertaining to the nearly 600 merchants who participated in the 2018 Mobile Payments and Fraud Survey can be found in the report's appendix. The report captured responses from merchants of all sizes, across different channels and types of goods or services sold. About 38 percent of merchants surveyed have annual revenue less than $10 million per year, while 27 percent earn at least $250 million per year in revenue. Nearly one-in-four merchants surveyed sell both digital and tangible goods online, while 63 percent sell digital goods and 61 percent sell shippable goods.

These findings are discussed in greater detail along with hundreds of other facts and findings in the sixth annual Mobile Payments and Fraud Survey.

The State of
Mobile Commerce

Mobile Payments & Fraud: 2018 Report

The State of Mobile Commerce

For six years the Mobile Payments and Fraud Survey has kept a finger on the pulse of digital payments to understand mobile's growing role and influence. This includes measuring the following across different types of merchants and over time:

- Current and planned support for mobile payments

- Payment channels supported, including mobile browser, mobile app, NFC and more

- Mobile payment methods and mobile wallets accepted

- Importance of mobile channel to a merchant's overall strategy

- Mobile channel sales as a share of total revenue
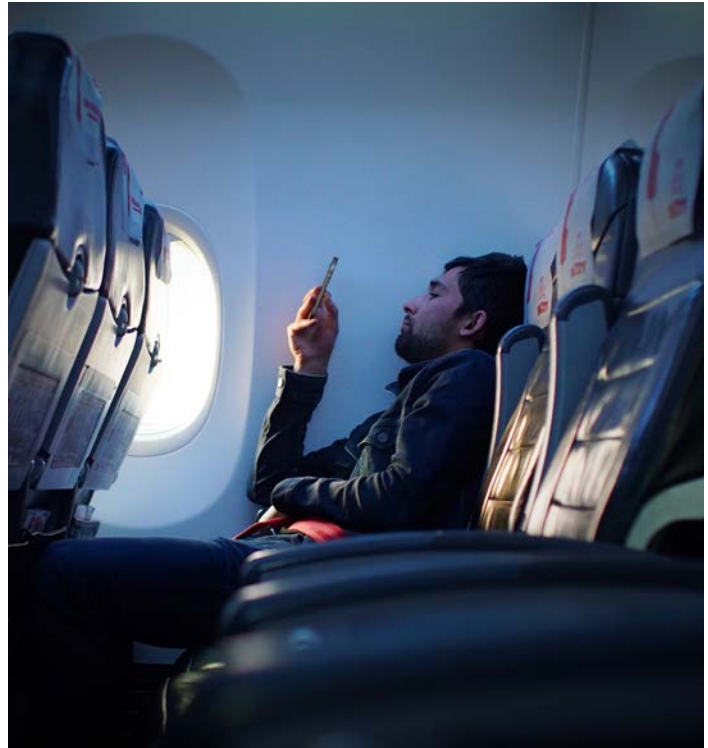
Key Takeaways

Support for the Mobile Channel

- The share of merchants who currently support the mobile channel has declined for two consecutive years, returning to levels observed in 2015.

- Nearly 90 percent of higher revenue merchants support the mobile channel today, compared to two-thirds of lower revenue merchants.

- Higher revenue merchants are more likely to support mobile apps whereas lower revenue merchants are more likely to support a mobile optimized site and both are equally as likely to support desktop eCommerce payments.

- Merchants are considerably more likely to support mobile apps compared to last year, 60 percent support mobile apps for online and 25 percent support mobile apps for in-store shopping. This is respectively compared to 44 and 13 percent last year.
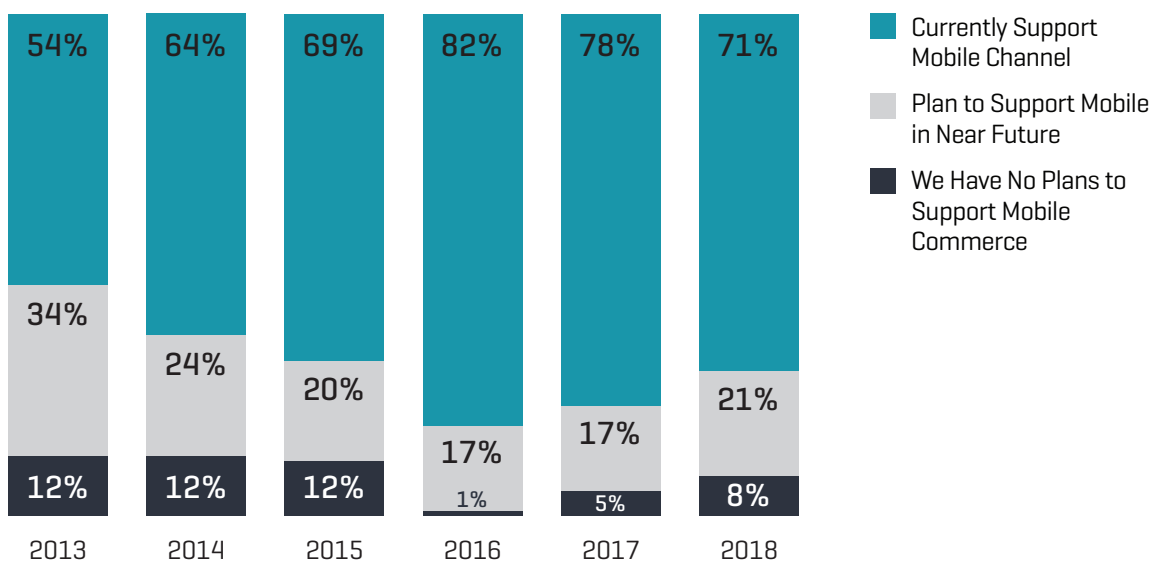
Significance of the Mobile Channel

- Nearly one-in-five merchants earn more than half of their revenue in the mobile sales channel today while one-third expect mobile to represent half of their total revenue by 2020. From 2013 to 2015 less than 3 percent of merchants earned more than half of their revenue in the mobile channel.

- Higher revenue merchants are more likely to say the mobile channel is very important to their overall strategy (63 percent) compared lower revenue merchants (44 percent).

Support for the Mobile Channel

Merchants who currently support the mobile channel have declined for the second consecutive year, dropping back to 2015 levels. The report identified that mobile channel support is down for the second consecutive year, from over 80 percent in 2016.

Past Mobile Payments and Fraud Surveys have shown that higher revenue merchants are significantly more likely to support the mobile channel, and that trend is apparent once again this year. Nearly 90 percent of merchants with annual revenue greater than $250 million support the mobile channel compared to two-thirds of merchants with annual revenue less than $10 or $25 million. Support for the mobile channel among lower revenue merchants remained flat from last year's study at 66 percent, while mobile channel support among the largest revenue merchants increased slightly from 85 to 87 percent.

Support for the Mobile Channel

Legend:
- Currently Support Mobile Channel
- Plan to Support Mobile in Near Future
- We Have No Plans to Support Mobile Commerce

Year	Currently Support	Plan to Support	No Plans
2013	54%	34%	12%
2014	64%	24%	12%
2015	69%	20%	12%
2016	82%	17%	1%
2017	78%	17%	5%
2018	71%	21%	8%

Support for the Mobile Channel (by Revenue)

	Less than $10M	$10M to $25M	$25M to $100M	$100M to $250M	More than $250M
Currently Support Mobile Channel	66%	67%	62%	78%	87%
Plan to Support Mobile in Near Future	23%	20%	27%	17%	11%
We Have No Plans to Support Mobile Commerce	11%	13%	12%	4%	2%

Legend:
- Currently Support Mobile Channel
- Plan to Support Mobile in Near Future
- We Have No Plans to Support Mobile Commerce
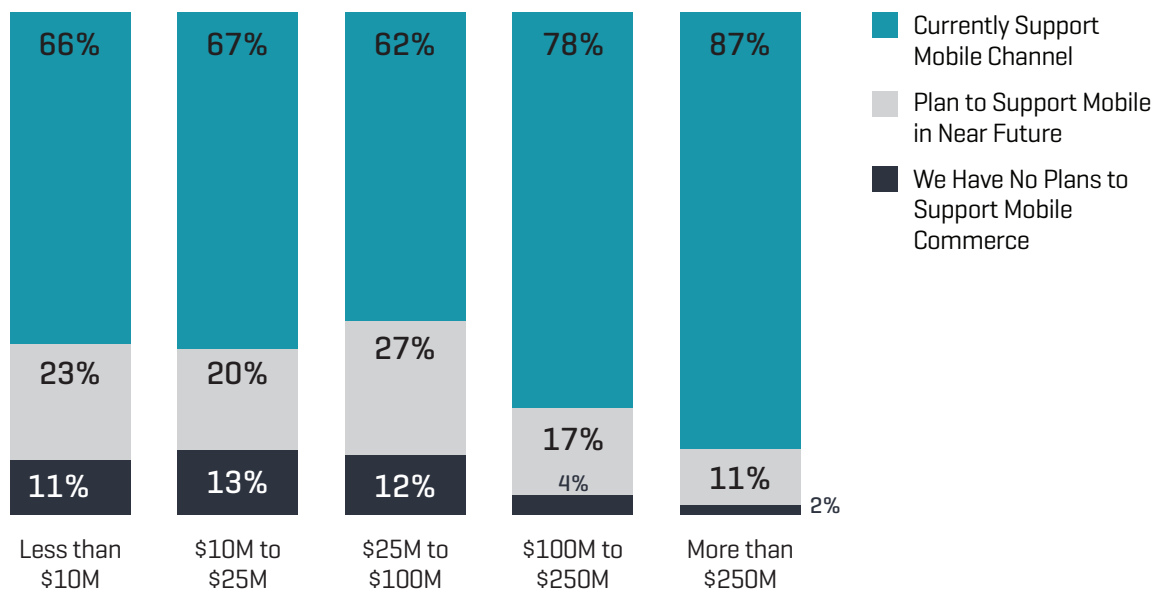
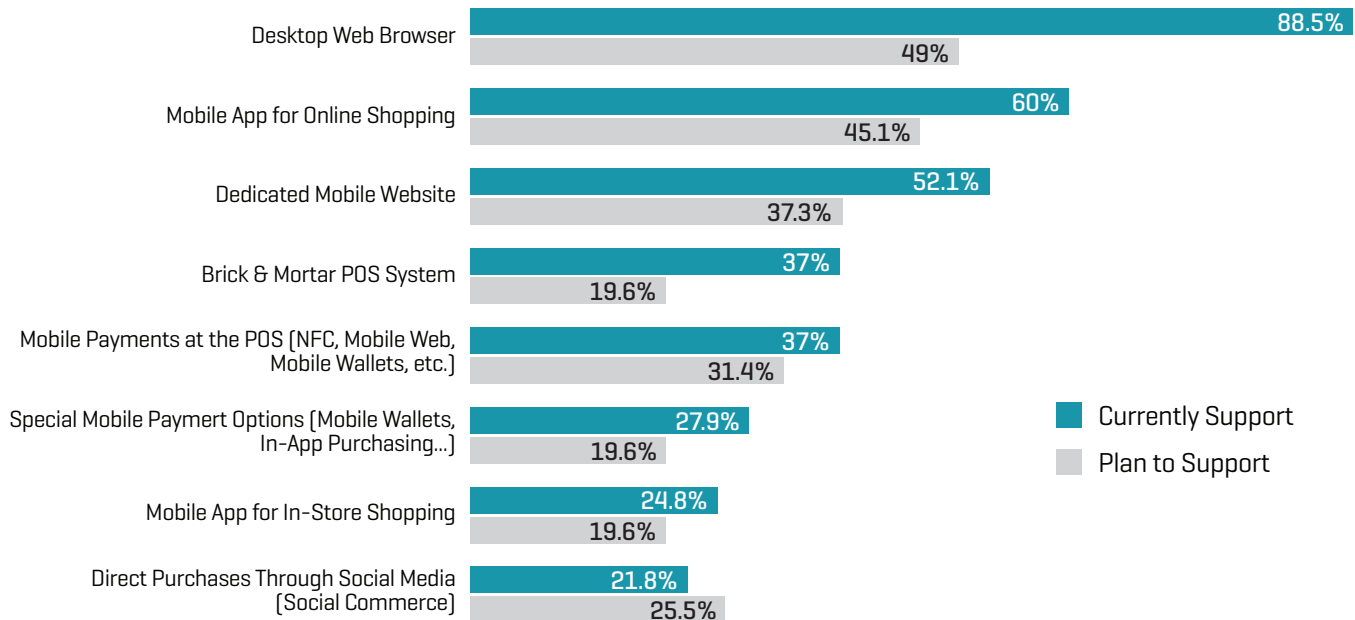Just as higher revenue merchants are more likely to support the mobile channel, there are several merchant segments or industries that are more likely to be active in the mobile channel as well. There are seven industries where around 80 percent or more of merchants support mobile today: apparel/accessories, automotive power sports, dating/social sites, health/beauty, jewelry, pets/ toys/sporting goods, and travel/ticketing. Support for the mobile channel is lowest amongst professional services, food/beverage and non-profit organizations.

Support for the Mobile Channel (by Merchant Segment)

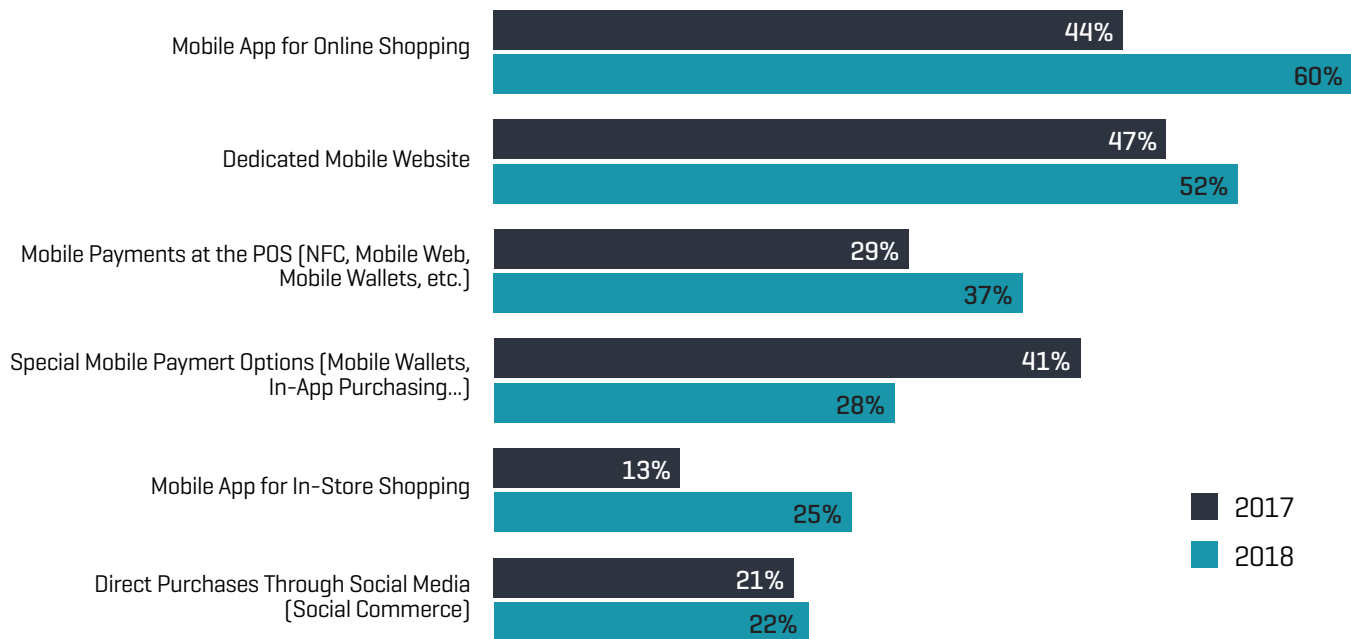| Merchant Segment	Actively Support	Plan to Support in Near Future	No Plans to Support
Apparel / Accessories	84.2%	10.5%	5.3%
Automotive / Powersports	84.6%	15.4%	0.0%
Bank / Credit Union / Lender / Insurance	62.5%	12.5%	25.0%
Dating / Social	90.0%	0.0%	10.0%
Digital Streaming / Downloads / Education	57.1%	39.3%	3.6%
Electronics / Computers	76.7%	16.7%	6.7%
Food / Beverage	66.7%	25.0%	8.3%
Games / Gambling	76.5%	17.6%	5.9%
Hardware / Home Improvement	76.0%	20.0%	4.0%
Health / Beauty	86.2%	6.9%	6.9%
Jewelry	79.2%	8.3%	12.5%
Kitchen / Home Furnishings	85.7%	3.6%	10.7%
Money Movement / Transfer	75.0%	0.0%	25.0%
Not for Profit	60.0%	30.0%	10.0%
Other	50.0%	0.0%	50.0%
Pets / Toys / Sporting Goods	87.5%	6.3%	6.3%
Professional Services	50.0%	40.0%	10.0%
Telecom	68.8%	25.0%	6.3%
Travel / Ticketing / Hospitality / Entertainment / Leisure	79.0%	14.5%	6.5%

Among merchants that support the mobile channel, there are varying levels of support for mobile payments, as well as web eCommerce and in-store payment channels. Nearly 90 percent of merchants surveyed support desktop web browser payments but just over half (52 percent) currently offer a dedicated mobile website. Nearly half of merchants plan to add or increase support for desktop web browser payments compared to 37 percent who plan to add or increase support for their mobile site. The report identified that merchants are more inclined to support mobile apps for online shopping (60 percent) as well as to increase or add support for online shopping mobile apps (45 percent). Over 70 percent of merchants support payments in three or more of these channels while 23 percent of merchants support five or more payment channels.

Payment Channels Merchant Support and Plan to Support

Channel	Currently Support	Plan to Support
Desktop Web Browser	88.5%	49%
Mobile App for Online Shopping	60%	45.1%
Dedicated Mobile Website	52.1%	37.3%
Brick & Mortar POS System	37%	19.6%
Mobile Payments at the POS (NFC, Mobile Web, Mobile Wallets, etc.)	37%	31.4%
Special Mobile Payment Options (Mobile Wallets, In-App Purchasing...)	27.9%	19.6%
Mobile App for In-Store Shopping	24.8%	19.6%
Direct Purchases Through Social Media (Social Commerce)	21.8%	25.5%

This is the first time the Mobile Payments and Fraud Survey reached more merchants with mobile apps for online shopping than who offer a dedicated mobile website, although support for each is up from last year. Merchants currently supporting a mobile website increased from 47 to 52 percent, but those currently supporting a mobile app for online shopping grew from 44 percent in 2017 to 60 percent this year. The share of merchants who currently support mobile apps for in-store shopping nearly doubled from 13 to 25 percent, while support for Near-Field Communication (NFC) and other mobile payments at the physical point-of-sale increased from 29 to 37 percent. Direct purchase though social media, or social commerce, stayed relatively flat from last year at 22 percent, although 26 percent of merchants plan to increase or add support for social commerce this year.

Payment Channels Merchant Support 2017 vs 2018

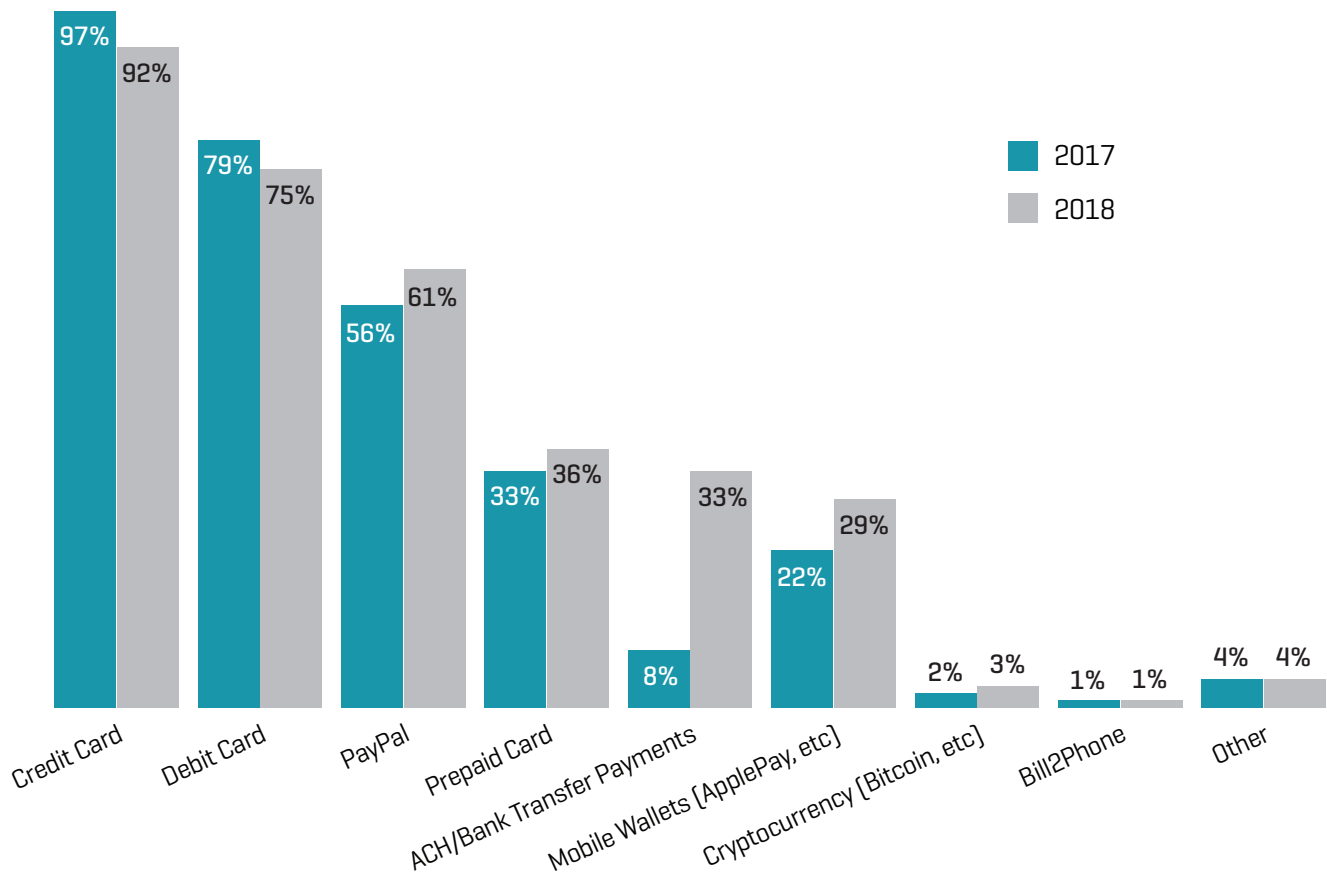| Channel	2017	2018
Mobile App for Online Shopping	44%	60%
Dedicated Mobile Website	47%	52%
Mobile Payments at the POS (NFC, Mobile Web, Mobile Wallets, etc.)	29%	37%
Special Mobile Paymert Options (Mobile Wallets, In-App Purchasing...)	41%	28%
Mobile App for In-Store Shopping	13%	25%
Direct Purchases Through Social Media (Social Commerce)	21%	22%

Support for desktop web browser payments is high across all merchants regardless of revenue, whereas higher revenue merchants are much more likely to support mobile apps. About three-quarters of merchants earning more than $100 million per year in revenue support payments within mobile apps for online shopping, compared to just 37 percent of merchants with annual revenue less than $10 million. Two-thirds of merchants with annual revenue between $25 and $100 million have mobile apps for shopping online.

Those merchants earning more than $250 million per year are the most likely to be multi-channel merchants with a brick-and-mortar presence. Over half of these high revenue merchants, 53 percent, accept payments at the physical point-of-sale, compared to 26 percent of merchants with less than $100 million in annual revenue. While less likely to have a brick-and-mortar location or mobile app for online shopping, merchants with annual revenue less than $10 million are more likely than the highest revenue merchants to support social commerce (33 percent vs. 13 percent) and accept payments via a dedicated mobile website (59 percent vs. 47 percent).

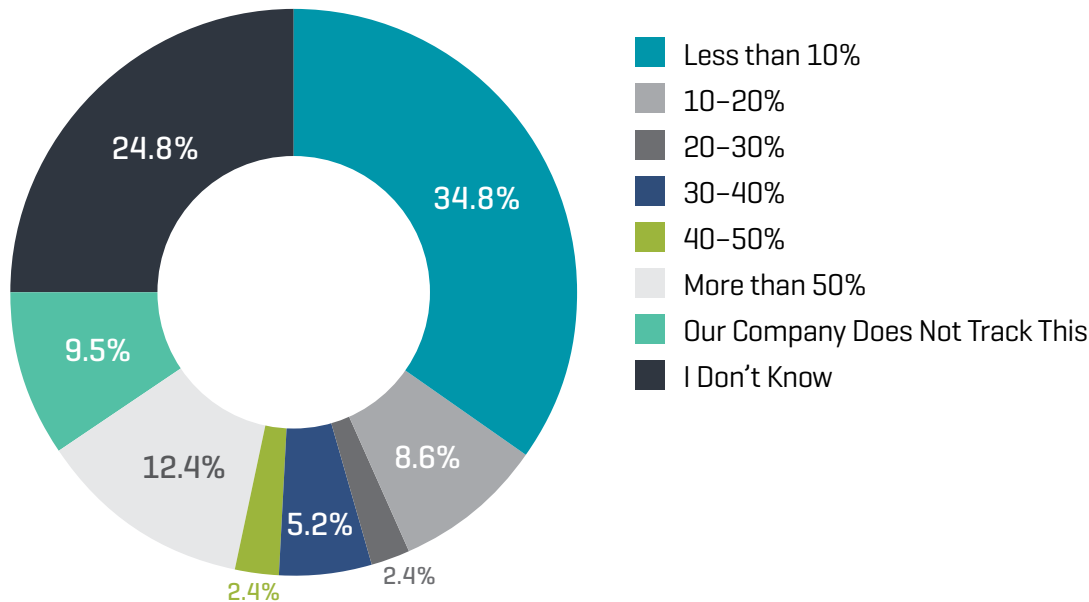| Channels Supported	< $10 Million	$10-25 Million	$25-100 Million	$100-250 Million	> $250 Million
Desktop Web Browser	87.8%	85.0%	86.7%	94.4%	89.4%
Mobile App for Online Shopping	36.7%	55.0%	66.7%	77.8%	74.5%
Dedicated Mobile Website	59.2%	60.0%	53.3%	44.4%	46.8%
Brick and Mortar POS System	26.5%	30.0%	20.0%	38.9%	53.2%
Mobile Payments at the POS (NFC, Mobile Web, Mobile Wallets, etc)	34.7%	30.0%	33.3%	16.7%	44.7%
Special Mobile Payment Options (Mobile Wallets, In-App Purchasing etc.)	18.4%	45.0%	20.0%	55.6%	19.1%
Mobile App for In-Store Shopping	16.3%	25.0%	20.0%	27.8%	31.9%
Direct Purchases Through Social Media (Social Commerce)	32.7%	20.0%	6.7%	38.9%	12.8%

In terms of the many payment methods merchants can support in the mobile channel, results from the 2018 Mobile Payments and Fraud Survey are somewhat similar to last year's study. Direct acceptance of credit and debit cards declined slightly and support for PayPal increased from 56 to 61 percent of merchants. Merchants who accept prepaid cards and cryptocurrencies increased just slightly. Most notably, merchants who accept ACH or bank transfer payments in the mobile channel increased from one-in-ten merchants to one-in-three, while support for mobile wallets increased from 22 to 29 percent.

Mobile Payment Methods Accepted

Legend:
- 2017
- 2018

Payment Method	2017	2018
Credit Card	97%	92%
Debit Card	79%	75%
PayPal	56%	61%
Prepaid Card	33%	36%
ACH/Bank Transfer Payments	8%	33%
Mobile Wallets (ApplePay, etc)	22%	29%
Cryptocurrency (Bitcoin, etc)	2%	3%
Bill2Phone	1%	1%
Other	4%	4%

The 2018 Mobile Payments and Fraud Survey also found that support for international payments in the mobile channel was minimal. About 35 percent of merchants say that zero or less than 10 percent of their mobile payments are from abroad. Only 31 percent of merchants say more than 10 percent of their mobile channel orders are international, while 25 percent of those surveyed don't know and 10 percent say this isn't something their organization tracks. Just 8 percent of merchants earning more than $250 million in annual revenue say their organization doesn't track domestic versus international mobile payment transactions, compared to 15 percent of merchants with annual revenue less than $10 million (nearly twice as many).

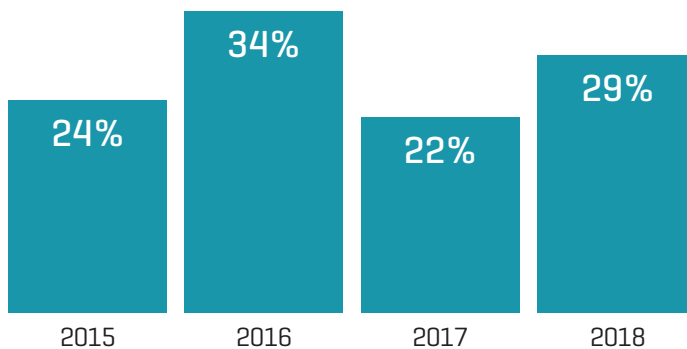## Share of Mobile Transactions that are International

- Less than 10%
- 10–20%
- 20–30%
- 30–40%
- 40–50%
- More than 50%
- Our Company Does Not Track This
- I Don't Know

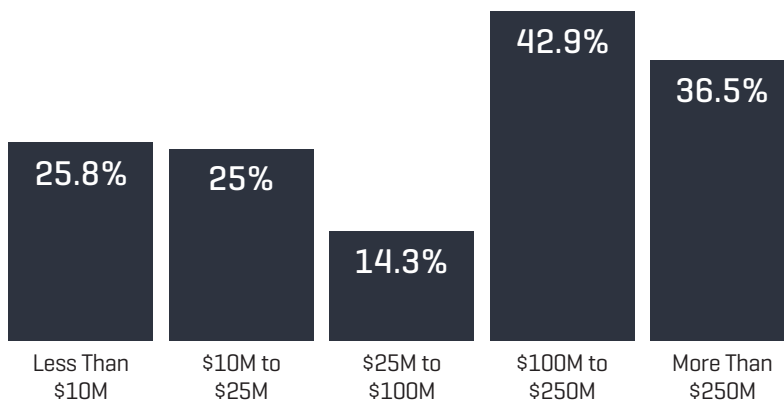34.8% · 24.8% · 9.5% · 12.4% · 2.4% · 5.2% · 2.4% · 8.6%

Mobile Wallets

While nearly 30 percent of merchants accept mobile wallets today, a year-over-year increase of 32 percent, it remains below the 34 percent of merchants who accepted mobile wallets in 2016. Once again, the survey results show stronger support for mobile among higher revenue merchants. Nearly 40 percent of merchants with annual revenue greater than $100 million accept mobile wallets today, compared to 23 percent of merchants with annual revenue less than $100 million and 30 percent of merchants overall.

Merchants that Accept Mobile Wallets

2015	2016	2017	2018
24%	34%	22%	29%

Merchants that Accept Mobile Wallets (By Revenue)

Less Than $10M	$10M to $25M	$25M to $100M	$100M to $250M	More Than $250M
25.8%	25%	14.3%	42.9%	36.5%

The Mobile Payments and Fraud Survey has also kept track of the specific mobile wallets merchants have accepted over the past six years, which has involved adding new mobile wallets as they come to market (Venmo and Square Cash are new additions this year) and also removing some (such as SoftCard and MCX CurrentC) along the way. This year's survey showed a notable decline in the share of merchants who accept major mobile wallets Apple Pay, down from 48 to 35 percent, and Google Pay (previously Android Pay – rebranded in October, 2017), down from 38 to 25 percent. The share of merchants who accept Samsung Pay, Visa Checkout, MasterPass and Chase Pay all stayed constant from last year while AMEX Express Checkout enjoyed the biggest gain in support, growing acceptance from 9 percent to 16 percent of merchants. Merchants also increased support for PayPal while 10 percent accept AliPay and 10 percent accept other ewallets.

Mobile Wallets Merchants Accept

Legend: 2015, 2016, 2017, 2018

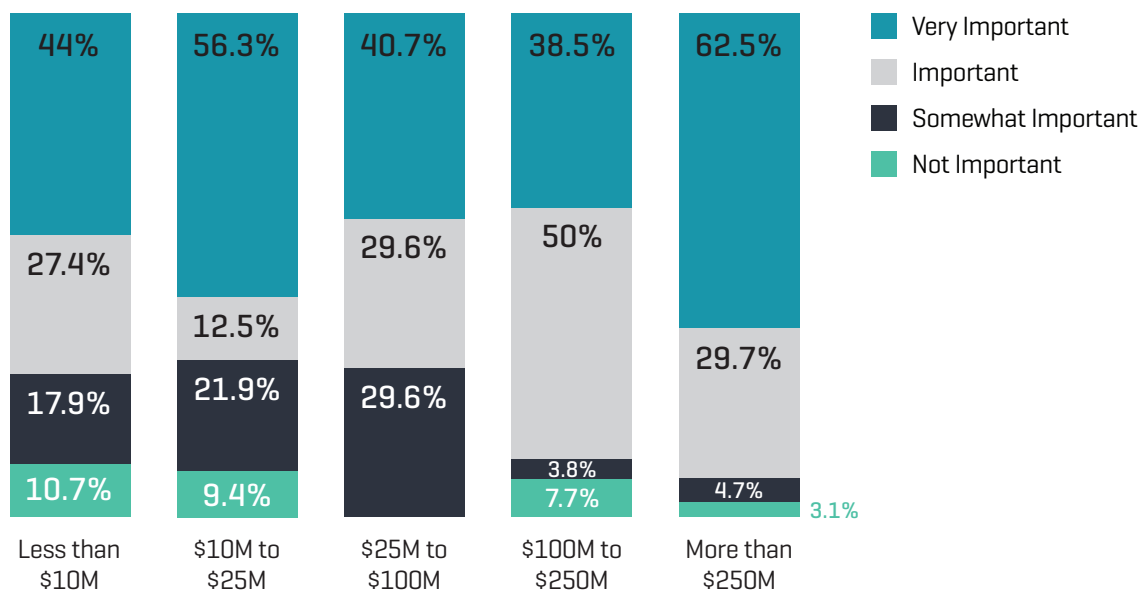| Wallet	2015	2016	2017	2018
Apple Pay	32%	45%	48%	35%
Google Pay	32%	34%	38%	25%
Samsung Pay		5%	15%	14%
PayPal	54%	58%	58%	64%
Visa Checkout	28%	16%	26%	28%
MasterPass	8%	8%	16%	15%
AMEX Express Checkout			9%	16%
Chase Pay			6%	6%
CapitalOne			4%	6%
Alipay			8%	10%
Other eWallet				10%
Venmo				5%
Square Cash				4%
Gyft			1%	
Other		6%	6%	3%
Uncertain	8%	15%	15%	22%
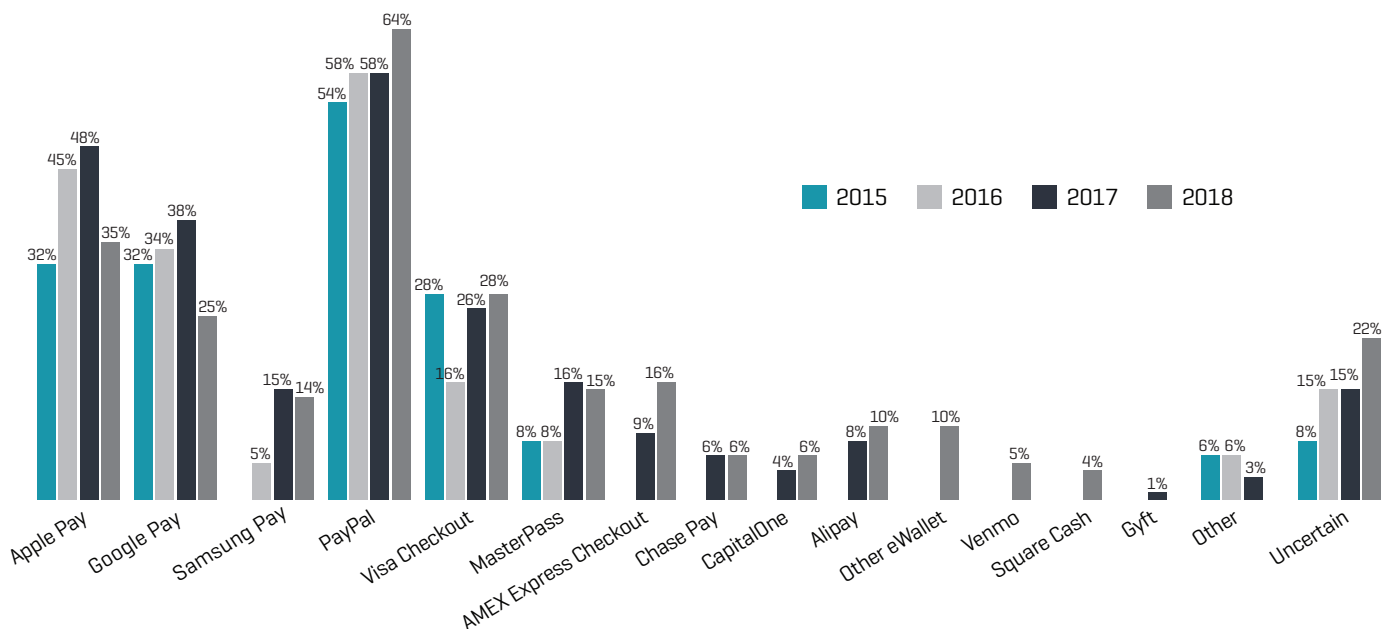
Nearly half of merchants surveyed, 47 percent, indicated that the mobile channel is very important for their organization's overall strategy. An additional 46 percent said the mobile channel is either important or somewhat important, while just 7 percent stated the mobile channel is not important for their overall strategy. Nearly 63 percent of merchants with annual revenue greater than $250 million consider the mobile channel very important, compared to just 44 percent of merchants with annual revenue less than $10 million who consider the mobile channel very important for their organization's overall strategy. Merchants selling jewelry, electronics and computers, health/beauty products and apparel or accessories are the most likely to consider the mobile channel very important to their overall strategy.

Importance of Mobile Channel for Overall Strategy

47.4%	29.8%	15.8%	7%

- Very Important
- Important
- Somewhat Important
- Not Important

Importance of Mobile Channel for Overall Strategy (By Revenue)

- Very Important
- Important
- Somewhat Important
- Not Important

	Less than $10M	$10M to $25M	$25M to $100M	$100M to $250M	More than $250M
Very Important	44%	56.3%	40.7%	38.5%	62.5%
Important	27.4%	12.5%	29.6%	50%	29.7%
Somewhat Important	17.9%	21.9%	29.6%	3.8%	4.7%
Not Important	10.7%	9.4%		7.7%	3.1%

Importance of Mobile Channel (By Vertical)

Vertical / Industry	Very Important	Important	Somewhat Important	Not Important
Apparel / Accessories	58.5%	24.6%	15.4%	1.5%
Automotive / Powersports	64.3%	28.6%	7.1%	0.0%
Bank / Credit Union / Lender / Insurance	80.0%	20.0%	0.0%	0.0%
Dating / Social	53.8%	38.5%	0.0%	7.7%
Digital Streaming / Downloads / Education	50.0%	28.6%	17.9%	3.6%
Electronics / Computers	62.9%	17.1%	20.0%	0.0%
Food / Beverage	55.2%	27.6%	10.3%	6.9%
Games / Gambling	30.0%	50.0%	15.0%	5.0%
Hardware / Home Improvement	44.4%	29.6%	22.2%	3.7%
Health / Beauty	62.5%	25.0%	9.4%	3.1%
Jewelry	70.8%	16.7%	0.0%	12.5%
Kitchen / Home Furnishings	61.3%	19.4%	16.1%	3.2%
Money Movement / Transfer	55.6%	33.3%	0.0%	11.1%
Not for Profit	30.0%	20.0%	30.0%	20.0%
Other	75.0%	0.0%	0.0%	25.0%
Pets / Toys	57.9%	36.8%	5.3%	0.0%
Sporting Goods	0.0%	80.0%	0.0%	20.0%
Professional Services	51.4%	24.3%	13.5%	10.8%
Telecom	63.2%	15.8%	15.8%	5.3%
Travel / Ticketing / Hospitality / Entertainment / Leisure	43.8%	35.9%	12.5%	7.8%

Revenue from the Mobile Sales Channel

Another metric the Mobile Payments and Fraud Survey has tracked for six years is the share of total revenue the mobile channel represents for merchants. The mobile sales channel increased as a source of total revenue once again after remaining stagnant last year, while mobile sales as a portion of total revenue have grown significantly since 2013. Just 2-3 percent of merchants earned more than half of their total revenue in the mobile channel between 2013 and 2015, compared to 17 percent of merchants earning the majority of their revenue in the mobile channel today.
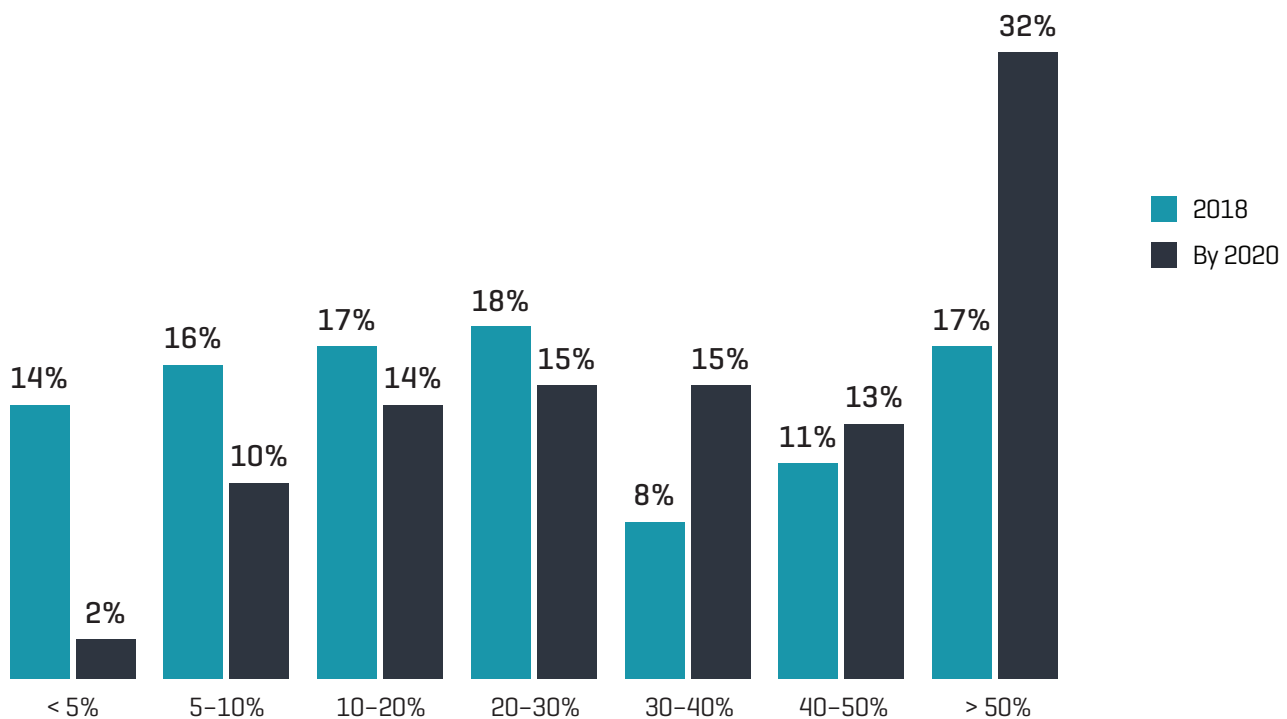
Meanwhile, just 14 percent of merchants earn less than 5 percent of their total revenue in the mobile channel today. The share of merchants earning 5 percent or less of their total revenue in the mobile channel has declined with each consecutive year of the Mobile Payments and Fraud Survey, from half of merchants in 2013, to 35 percent in 2015, to around one-in-five merchants the previous two years and just 14 percent today.

Share of Total Revenue from the Mobile Sales Channel

Legend:
- More than 50%
- 40–50%
- 30–40%
- 20–30%
- 10–20%
- 5–10%
- Less than 5%

Category	2013	2014	2015	2016	2017	2018
More than 50%	1%	3%	3%	10%	10%	17%
40–50%	2%	3%	3%	11%	10%	11%
30–40%	2%	5%	3%	9%	11%	8%
20–30%	5%	11%	13%	13%	16%	18%
10–20%	13%	20%	22%	14%	17%	17%
5–10%	28%	21%	21%	16%	16%	16%
Less than 5%	50%	38%	35%	21%	20%	14%
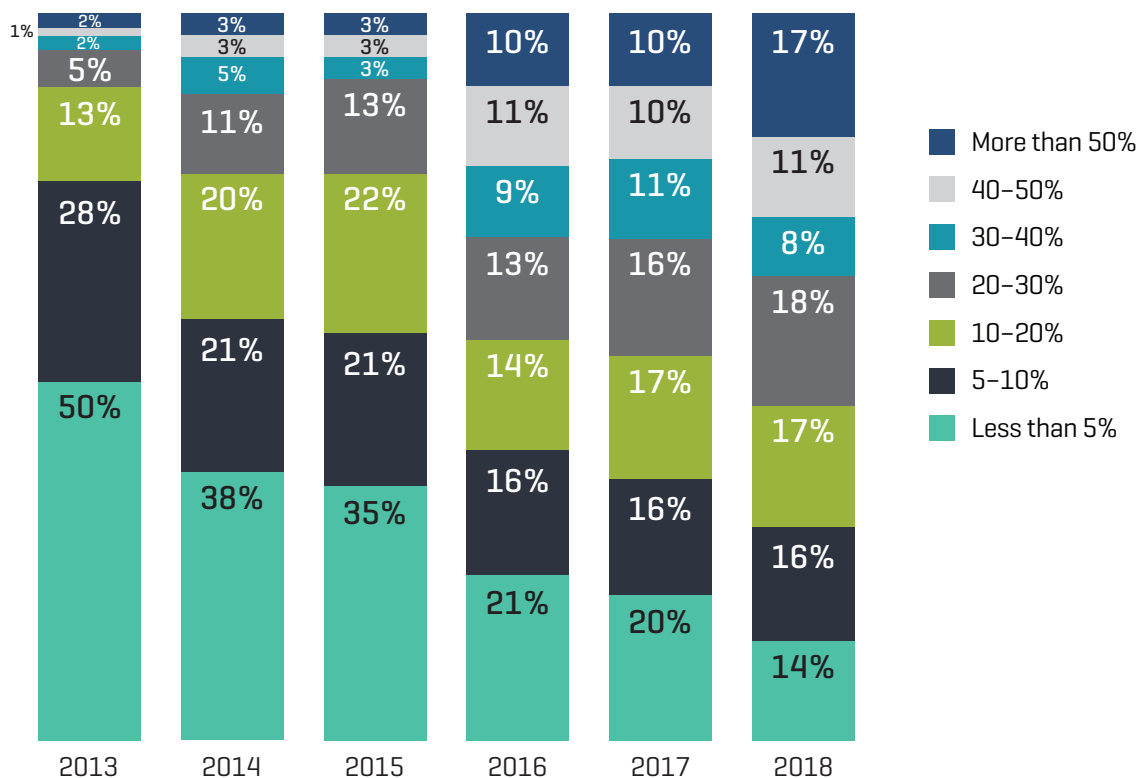
The share of merchants who earn more than half of their total revenue in the mobile channel grew from just 2 percent of merchants in 2013 to 17 percent of merchants today, but this growth is still just beginning. Nearly one-third of merchant surveyed believe the mobile channel will represent at least half of their total revenue by 2020. Sixty percent of merchants say the mobile channel will represent at least 30 percent of their total revenue by then. Only one out of every 50 merchants believes the mobile channel will be less than 5 percent of their total revenue by 2020, which is remarkable considering that half of merchants earned less than 5 percent of their revenue in the mobile channel at the time of the inaugural Mobile Payments and Fraud Survey.

Share of Total Revenue from the Mobile Channel

Legend:
- 2018
- By 2020

	< 5%	5–10%	10–20%	20–30%	30–40%	40–50%	> 50%
2018	14%	16%	17%	18%	8%	11%	17%
By 2020	2%	10%	14%	15%	15%	13%	32%

The share of total revenue earned in the mobile sales channel, both today and expected in the next two years, differs by merchants across the different types of goods or services they provide. Merchants selling jewelry (29 percent), apparel or accessories (22 percent) and gaming/gambling merchants (25 percent) are some of the most likely to report that mobile represents more than half of their organization's total revenue. Professional services and non-profit organizations are the most likely to say mobile is less than 5 percent of their total revenue today.

Percent of Revenue in the Mobile Channel Today (By Market Segment)

Market Segment	< 5%	5-10%	10-20%	20-30%	30-40%	40-50%	> 50%
Apparel / Accessories	2.4%	14.6%	19.5%	19.5%	7.3%	14.6%	22.0%
Travel / Ticketing / Hospitality / Entertainment / Leisure	14.6%	17.1%	19.5%	19.5%	2.4%	14.6%	12.2%
Digital Streaming / Downloads / Education	13.6%	13.6%	22.7%	27.3%	9.1%	4.5%	9.1%
Health / Beauty	9.5%	14.3%	9.5%	28.6%	4.8%	19.0%	14.3%
Kitchen / Home Furnishings	0.0%	15.8%	26.3%	26.3%	0.0%	21.1%	10.5%
Electronics / Computers	5.6%	22.2%	0.0%	44.4%	5.6%	16.7%	5.6%
Professional Services	27.8%	11.1%	11.1%	44.4%	0.0%	5.6%	0.0%
Hardware / Home Improvement	11.8%	17.6%	29.4%	35.3%	0.0%	0.0%	5.9%
Food / Beverage	13.3%	13.3%	26.7%	20.0%	6.7%	13.3%	6.7%
Jewelry	0.0%	0.0%	7.1%	50.0%	0.0%	14.3%	28.6%
Pets / Toys	0.0%	18.2%	0.0%	45.5%	0.0%	36.4%	0.0%
Telecom	9.1%	9.1%	18.2%	27.3%	9.1%	9.1%	18.2%
Automotive / Powersports	10.0%	0.0%	30.0%	20.0%	0.0%	20.0%	20.0%
Games / Gambling	12.5%	25.0%	12.5%	25.0%	0.0%	0.0%	25.0%
Dating / Social	0.0%	14.3%	14.3%	14.3%	42.9%	0.0%	14.3%
Not for Profit	20.0%	20.0%	0.0%	20.0%	20.0%	0.0%	20.0%
Bank / Credit Union / Lender / Insurance	0.0%	25.0%	0.0%	50.0%	25.0%	0.0%	0.0%
Money Movement / Transfer	0.0%	0.0%	25.0%	50.0%	25.0%	0.0%	0.0%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	50.0%	50.0%

There are eight categories of goods or services sold where at least one-third of merchants expects the mobile channel to be more than half of their organization's total revenue by 2020 including dating and social sites, jewelry, apparel and accessories, health/beauty and kitchen/home goods merchants. Three-quarters of jewelry merchants and those in the money movement industry expect the mobile channel to be at least 40 percent of their total revenue by 2020. These are two of the ten industries where at least half of merchants expect the mobile revenue to represent 40 percent or more of their total revenue within the next two years.

Percent of Revenue in the Mobile Channel in 2 Years (By Market Segment)

Market Segment	< 5%	5-10%	10-20%	20-30%	30-40%	40-50%	> 50%
Apparel / Accessories	0.0%	6.8%	6.8%	11.4%	15.9%	20.5%	38.6%
Travel / Ticketing / Hospitality / Entertainment / Leisure	0.0%	15.0%	17.5%	10.0%	20.0%	17.5%	20.0%
Digital Streaming / Downloads / Education	0.0%	13.6%	9.1%	18.2%	13.6%	13.6%	31.8%
Health / Beauty	0.0%	14.3%	14.3%	4.8%	9.5%	23.8%	33.3%
Kitchen / Home Furnishings	0.0%	5.0%	10.0%	15.0%	15.0%	20.0%	35.0%
Professional Services	5.3%	10.5%	5.3%	15.8%	26.3%	21.1%	15.8%
Electronics / Computers	0.0%	5.6%	5.6%	16.7%	22.2%	22.2%	27.8%
Hardware / Home Improvement	5.9%	11.8%	5.9%	29.4%	17.6%	23.5%	5.9%
Jewelry	0.0%	0.0%	0.0%	12.5%	12.5%	31.3%	43.8%
Food / Beverage	0.0%	13.3%	26.7%	20.0%	13.3%	20.0%	6.7%
Pets / Toys	0.0%	9.1%	9.1%	0.0%	27.3%	36.4%	18.2%
Automotive / Powersports	0.0%	10.0%	10.0%	10.0%	30.0%	0.0%	40.0%
Telecom	0.0%	0.0%	10.0%	0.0%	30.0%	20.0%	40.0%
Games / Gambling	12.5%	12.5%	0.0%	12.5%	37.5%	0.0%	25.0%
Dating / Social	0.0%	0.0%	14.3%	0.0%	28.6%	0.0%	57.1%
Not for Profit	0.0%	0.0%	40.0%	20.0%	0.0%	20.0%	20.0%
Bank / Credit Union / Lender / Insurance	0.0%	0.0%	0.0%	50.0%	25.0%	25.0%	0.0%
Money Movement / Transfer	0.0%	0.0%	0.0%	25.0%	0.0%	75.0%	0.0%
Other	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	100.0%

Mobile Channel Priorities, Challenges and Capabilities

Mobile Payments & Fraud: 2018 Report

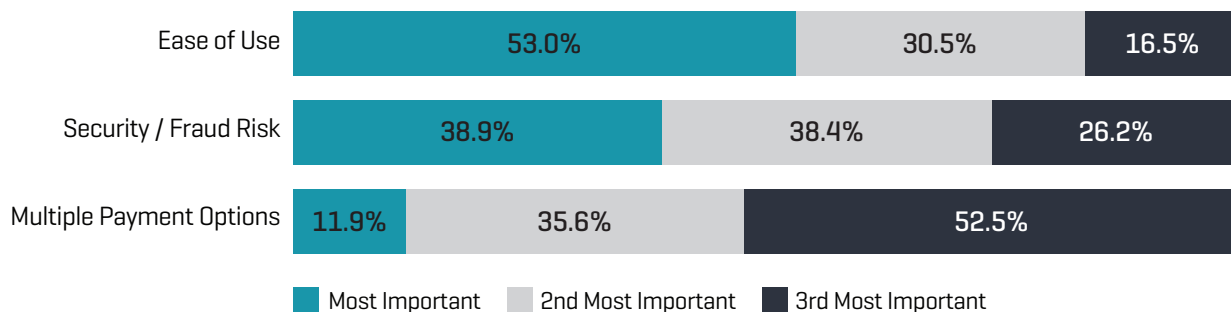# Mobile Channel Priorities, Challenges and Capabilities

The 2018 Mobile Payments and Fraud Survey captured what is most important to merchants regarding their mobile channel efforts and understanding what challenges merchants face trying to reach and convert consumers in the mobile channel.

Key Takeaways

- Merchants are more concerned with ease of use than managing security and fraud risk in the mobile channel. Maintaining ease of use is also more likely to be cited as a major challenge than being able to detect fraud and addressing mobile security concerns.

- Since 2013, the share of merchants able to detect transactions coming from mobile devices has grown from 16 percent to 46 percent today.

- Higher revenue merchants are more likely to be able to detect mobile devices (88 percent) versus lower revenue merchants (62 percent), and are more likely to consider this capability to be very important (49 versus 27 percent).
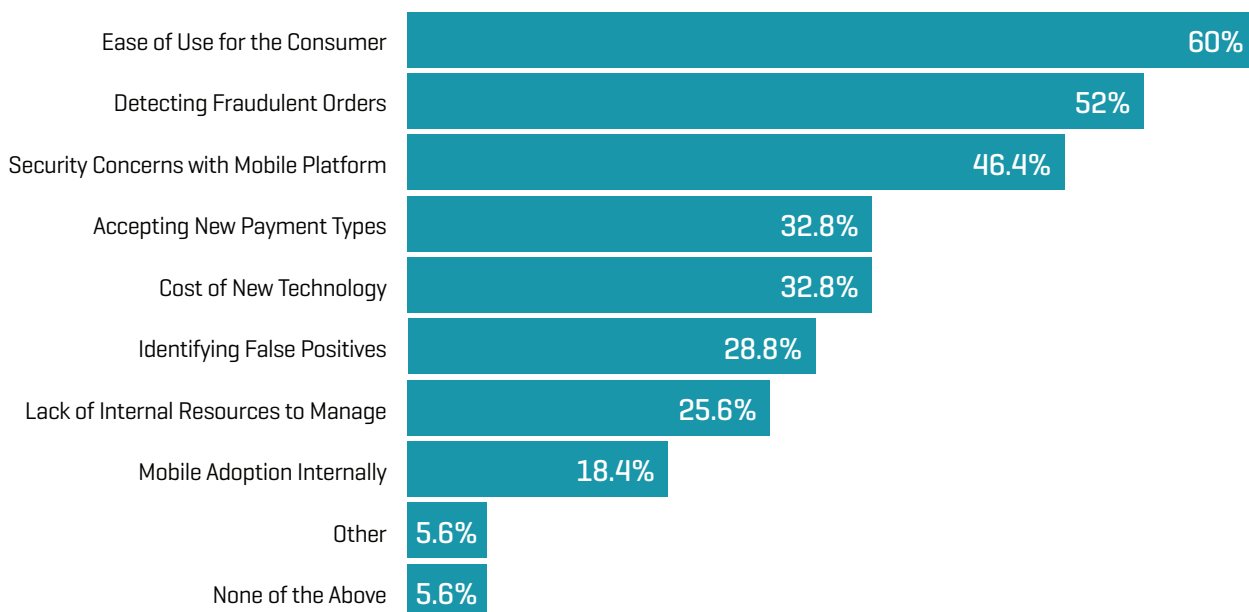
This portion of the survey started with asking merchants to rank their priorities in terms of what they want to maintain or achieve with their mobile commerce strategy. More than half of merchants, 53 percent, are most concerned with ensuring ease of use for consumers to transact on their mobile platforms. Merchants are next-most likely to consider security or managing fraud risk their top priority in the mobile channel. Managing fraud risk and ease of use in the mobile channel requires balance on the merchant's behalf. Overly strict fraud policies and controls can hinder ease of use and cause false positives, while being too lenient and focused on sales conversion can leave merchants exposed to fraud losses. While offering the right mix of mobile payment options is also critical, 53 percent of merchants rank this as their third priority, behind ensuring ease of use and managing fraud risk.

What's Most Important with Mobile Commerce

	Most Important	2nd Most Important	3rd Most Important
Ease of Use	53.0%	30.5%	16.5%
Security / Fraud Risk	38.9%	38.4%	26.2%
Multiple Payment Options	11.9%	35.6%	52.5%

There are many more specific challenges merchants can, and likely will, face in the mobile sales channel. Consistent with the fact that ease of use and managing fraud are ranked the top two priorities, maintaining ease of use for the consumer (60 percent) and the ability to detect fraudulent order attempts (52 percent) are the most commonly cited challenges by mobile channel merchants today. Addressing consumer security concerns with the mobile platform was the third most commonly reported challenge at 46 percent. About one-third of merchants each reported that keeping up with mobile channel, accepting new payment types and the costs of new technology are challenges their organizations face. Nearly 30 percent of mobile channel merchants cited false positives as one of their biggest challenges, again alluding to the difficulty of balancing fraud detection with sales conversion and ease of use. Only 6 percent of merchants said they are not facing any of these challenges in the mobile channel.

Biggest Challenges in the Mobile Channel

Challenge	Percentage
Ease of Use for the Consumer	60%
Detecting Fraudulent Orders	52%
Security Concerns with Mobile Platform	46.4%
Accepting New Payment Types	32.8%
Cost of New Technology	32.8%
Identifying False Positives	28.8%
Lack of Internal Resources to Manage	25.6%
Mobile Adoption Internally	18.4%
Other	5.6%
None of the Above	5.6%

There are 16 industries or merchant categories of goods/services sold where at least half of merchants surveyed cite detecting fraud as one of their biggest challenges in the mobile channel. This includes nearly 80 percent of jewelry and 72 percent of health/beauty merchants, as well as more than 63 percent of electronics/computers and dating/social site merchants. One thing that each of these industries has in common is that all deal with higher than average fraud risk exposure. More than half of electronics/computers merchants cite identifying false positives as one of their biggest challenges in the mobile channel. Health/beauty, jewelry and apparel/accessories merchants are just a few of the nine industries where about one-third or more of merchants state false positives are one of their biggest challenges in the mobile channel.

There are 14 merchant segments where more than half of respondents list ease of use for the consumer as one of their biggest challenges in the mobile channel, including about 80 percent of merchants who sell jewelry and more than 70 percent of apparel/accessories and kitchen/home furnishings merchants. Electronics/computers merchants and those in the money movement industry are most concerned with accepting new payment types.

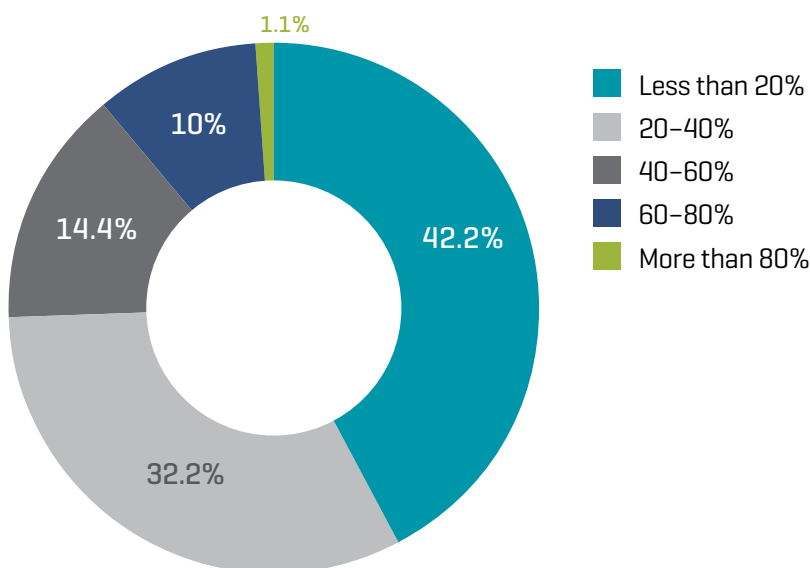### Biggest Challenges in the Mobile Channel (By Market Segment)

Market Segment	Accepting New Payment Types	Cost of New Technology	Detecting Fraud	Ease of Use for Consumer	Identifying False Positives	Lack of Internal Resources	Mobile Adoption Internally	Security Concerns with Mobile	Other	None
Apparel / Accessories	37.5%	46.4%	50.0%	73.2%	32.1%	35.7%	17.9%	53.6%	5.4%	3.6%
Automotive / Powersports	28.6%	28.6%	50.0%	57.1%	7.1%	14.3%	28.6%	35.7%	14.3%	21.4%
Bank / Credit Union / Lender / Insurance	29.4%	23.5%	41.2%	41.2%	29.4%	29.4%	41.2%	58.8%	17.6%	5.9%
Dating / Social	45.5%	27.3%	63.6%	54.5%	27.3%	36.4%	27.3%	27.3%	9.1%	9.1%
Digital Streaming / Downloads / Education	48.3%	51.7%	62.1%	62.1%	27.6%	34.5%	27.6%	58.6%	10.3%	6.9%
Electronics / Computers	53.3%	50.0%	63.3%	66.7%	53.3%	43.3%	26.7%	60.0%	13.3%	6.7%
Food / Beverage	33.3%	41.7%	54.2%	66.7%	33.3%	41.7%	29.2%	45.8%	4.2%	8.3%
Games / Gambling	35.3%	29.4%	52.9%	35.3%	23.5%	23.5%	29.4%	41.2%	5.9%	17.6%
Hardware / Home Improvement	40.0%	32.0%	56.0%	56.0%	24.0%	36.0%	32.0%	52.0%	12.0%	8.0%
Health / Beauty	40.6%	43.8%	71.9%	65.6%	37.5%	25.0%	12.5%	50.0%	3.1%	3.1%
Jewelry	33.3%	33.3%	79.2%	79.2%	41.7%	25.0%	20.8%	62.5%	8.3%	4.2%
Kitchen / Home Furnishings	42.9%	39.3%	50.0%	71.4%	32.1%	32.1%	28.6%	53.6%	7.1%	3.6%
Money Movement / Transfer	50.0%	30.0%	40.0%	40.0%	30.0%	30.0%	60.0%	50.0%	10.0%	20.0%
Not for Profit	27.3%	27.3%	63.6%	63.6%	45.5%	27.3%	27.3%	63.6%	18.2%	9.1%
Other	44.4%	22.2%	55.6%	44.4%	22.2%	11.1%	22.2%	44.4%	11.1%	22.2%
Pets / Toys	43.8%	37.5%	68.8%	62.5%	37.5%	37.5%	12.5%	43.8%	6.3%	12.5%
Professional Services	43.9%	34.1%	41.5%	70.7%	26.8%	22.0%	26.8%	56.1%	17.1%	4.9%
Telecom	44.4%	50.0%	55.6%	44.4%	44.4%	50.0%	27.8%	27.8%	22.2%	11.1%
Travel / Ticketing / Hospitality / Entertainment / Leisure	34.4%	31.3%	56.3%	65.6%	28.1%	29.7%	20.3%	53.1%	7.8%	7.8%

Sales conversion and abandonment are a struggle for many to most merchants in the mobile channel. This year's Mobile Payments and Fraud Survey included a new question asking merchants about their checkout abandonment rate in the mobile channel. Nearly 60 percent of respondents didn't know, implying this might not be something their organization measures. Controlling for the 59 percent of merchants who don't know their mobile checkout abandonment rate, 25 percent say their abandonment rate is more than 40 percent and 11 percent say it is at least 60 percent. About 42 percent of merchants report a mobile checkout abandonment rate of less than 20 percent.

Mobile Checkout Abandonment Rate

- Less than 20%
- 20–40%
- 40–60%
- 60–80%
- More than 80%
- I Don't Know

17.4%
13.2%
5.9%
4.1%
0.5%
58.9%
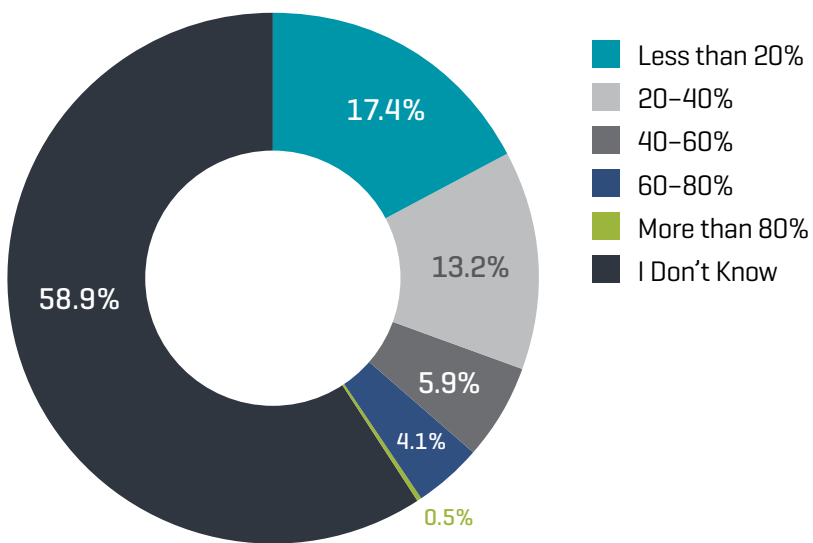
Mobile Checkout Abandonment Rate (Excluding "I Don't Know")

- Less than 20%
- 20–40%
- 40–60%
- 60–80%
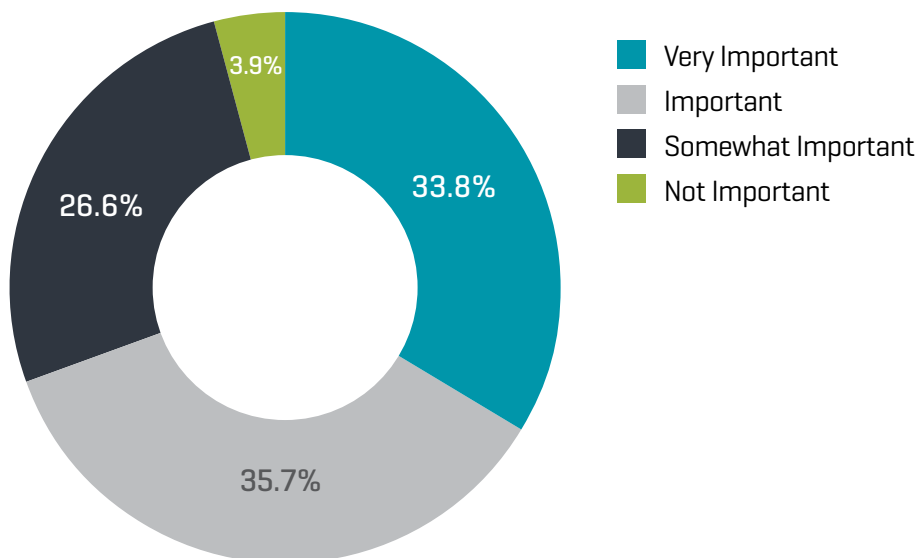- More than 80%

1.1%
10%
14.4%
42.2%
32.2%

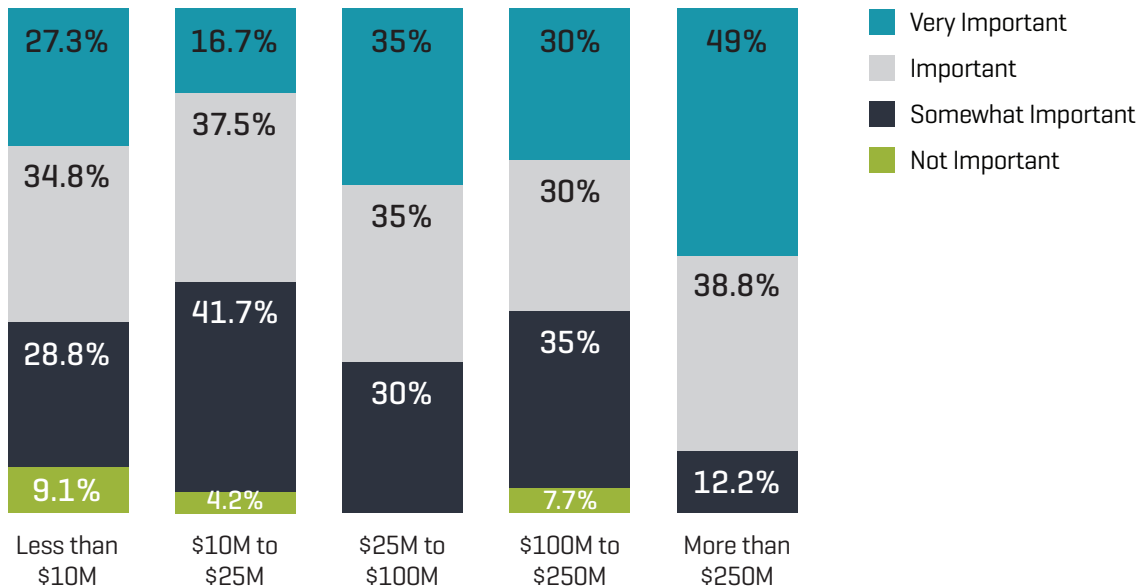# The Importance of Detecting Mobile Devices and the Ability to Do So

About 70 percent of merchants believe it is important or very important to be able to detect when a transaction is originating from a mobile device. While this is nearly identical to last year's results (71 percent), the share of merchants who said it is very important to be able to detect mobile devices fell from 47 to 34 percent this year.

Nearly half of merchants with annual revenue above $250 million say being able to detect mobile devices is very important, compared to just 27 percent of merchants with annual revenue less than $10 million. Just over 9 percent of merchants in this lowest revenue category say being able to detect mobile devices is not important, whereas there are no merchants earning more than $250 million in annual revenue that agree with this statement.

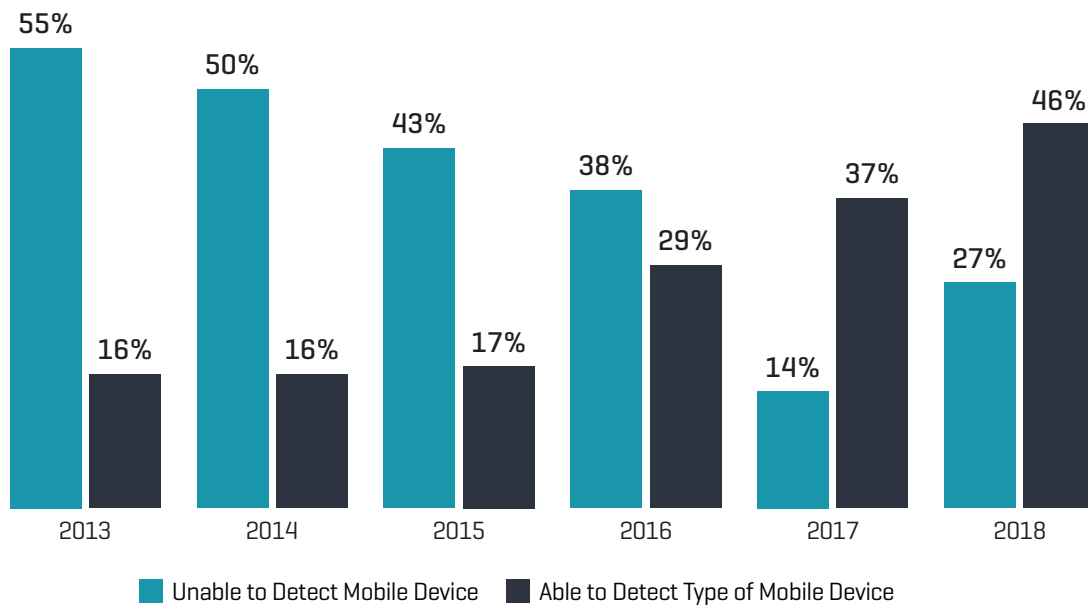**Importance of Being Able to Detect Transactions from Mobile Devices**

3.9%
33.8%
26.6%
35.7%

- Very Important
- Important
- Somewhat Important
- Not Important

Importance of Being Able to Detect Transactions from Mobile Devices (By Revenue)

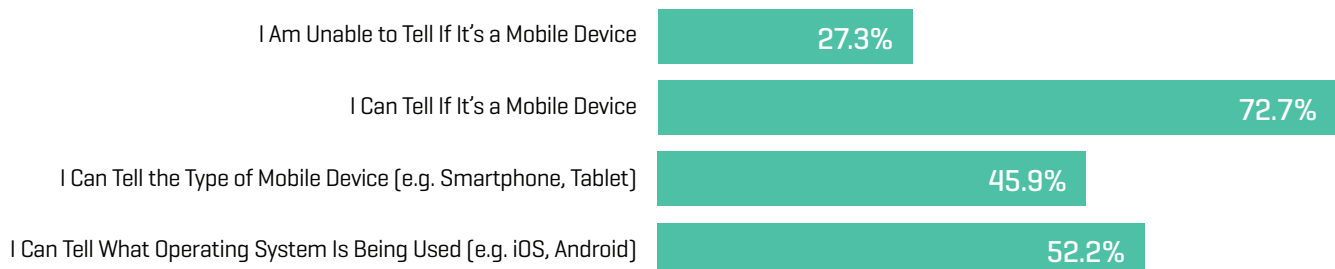|					Legend
27.3%	16.7%	35%	30%	49%	■ Very Important
34.8%	37.5%	35%	30%	38.8%	■ Important
28.8%	41.7%	30%	35%	12.2%	■ Somewhat Important
9.1%	4.2%		7.7%		■ Not Important
Less than $10M	$10M to $25M	$25M to $100M	$100M to $250M	More than $250M	

The ability to detect transactions coming from mobile devices has grown considerably since the inaugural Mobile Payments and Fraud Survey. In 2013, just 16 percent of merchants could detect and differentiate between types of mobile devices compared to 46 percent of merchants with this capability today. While the share of merchants unable to detect when a transaction is coming from a mobile device increased to 27 percent from 14 percent last year, this is still significantly lower than the 55 percent of merchants overall who were unable to differentiate desktop eCommerce from mobile eCommerce in 2013.

Although nearly three-quarters of merchants are able to detect whether an eCommerce transaction is coming from a mobile device, fewer are able to see more detail into the mobile device being used. Just over half of merchants, 52 percent, can tell what mobile operating system is in use (iOS, Android, Windows, etc.), while 46 percent can differentiate the specific type of mobile device, for example whether the consumer is using a smartphone or tablet.
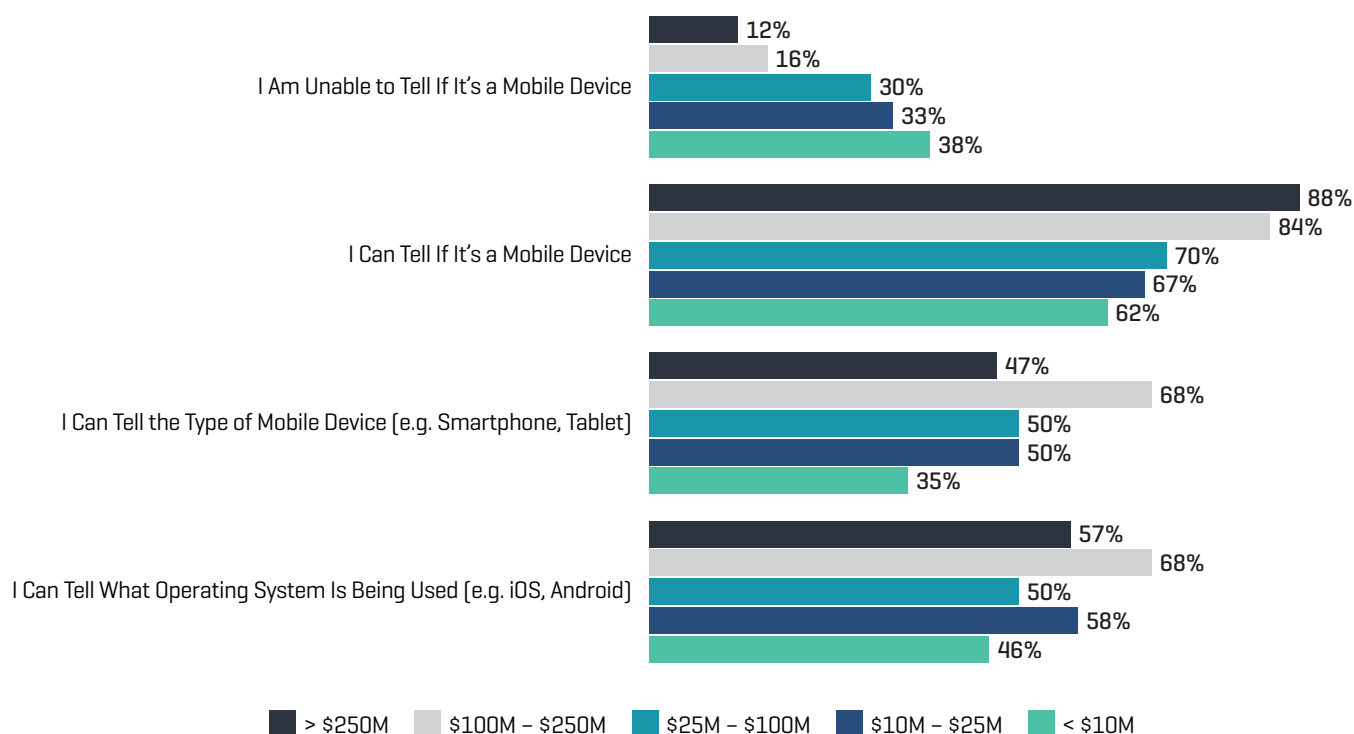
Ability to Detect Mobile Devices 2013-2018

	2013	2014	2015	2016	2017	2018
Unable to Detect Mobile Device	55%	50%	43%	38%	14%	27%
Able to Detect Type of Mobile Device	16%	16%	17%	29%	37%	46%

■ Unable to Detect Mobile Device   ■ Able to Detect Type of Mobile Device

Ability to Detect Mobile Devices

I Am Unable to Tell If It's a Mobile Device	27.3%
I Can Tell If It's a Mobile Device	72.7%
I Can Tell the Type of Mobile Device (e.g. Smartphone, Tablet)	45.9%
I Can Tell What Operating System Is Being Used (e.g. iOS, Android)	52.2%

Higher revenue merchants are more likely to say that being able to detect when a transaction is coming from a mobile device is very important, and that may be because they are considerably more likely to have this capability relative to lower revenue merchants and have had the opportunity to see the benefit firsthand. Just 12 percent of merchants with annual revenue greater than $250 million are unable to detect mobile devices, compared to nearly 40 percent of merchants with annual revenue less than $10 million. Higher revenue merchants are also much more likely than lower revenue merchants to be able to detect the mobile operating system (57 versus 46 percent) and the type of mobile device (47 versus 35 percent) being used.

Ability to Detect Mobile Devices (By Revenue)

I Am Unable to Tell If It's a Mobile Device
- 12%
- 16%
- 30%
- 33%
- 38%

I Can Tell If It's a Mobile Device
- 88%
- 84%
- 70%
- 67%
- 62%

I Can Tell the Type of Mobile Device (e.g. Smartphone, Tablet)
- 47%
- 68%
- 50%
- 50%
- 35%

I Can Tell What Operating System Is Being Used (e.g. iOS, Android)
- 57%
- 68%
- 50%
- 58%
- 46%

Legend: ■ > $250M   ■ $100M – $250M   ■ $25M – $100M   ■ $10M – $25M   ■ < $10M

The report revealed that lending and insurance, non-profit, food/beverage and electronics/computers industry merchants are among those least likely to be able to recognize when a transaction is coming from a mobile device. Dating and social sites, as well as pet, toys and sporting goods merchants are the most likely to be able to see the most detail in the mobile devices being used including their operating system and type of device, as indicated by nearly 90 percent of these merchants.

Ability to Detect Mobile Devices (By Industry)

| Vertical / Industry	Unable to Detect Mobile	Able to Detect Mobile Device	Know Type of Mobile Device	Know Mobile Operating System
Apparel / Accessories	21.2%	78.8%	61.5%	61.5%
Automotive / Powersports	14.3%	85.7%	64.3%	64.3%
Bank / Credit Union / Lender / Insurance	33.3%	66.7%	50.0%	33.3%
Dating / Social	12.5%	87.5%	87.5%	87.5%
Digital Streaming / Downloads / Education	26.9%	73.1%	53.8%	69.2%
Electronics / Computers	28.0%	72.0%	56.0%	64.0%
Food / Beverage	35.0%	65.0%	30.0%	55.0%
Games / Gambling	13.3%	86.7%	46.7%	53.3%
Hardware / Home Improvement	14.3%	85.7%	61.9%	52.4%
Health / Beauty	26.9%	73.1%	53.8%	65.4%
Jewelry	15.0%	85.0%	65.0%	75.0%
Kitchen / Home Furnishings	12.5%	87.5%	70.8%	70.8%
Money Movement / Transfer	16.7%	83.3%	66.7%	50.0%
Not for Profit	50.0%	50.0%	37.5%	37.5%
Other	0.0%	100.0%	25.0%	100.0%
Pets / Toys	7.1%	92.9%	78.6%	85.7%
Professional Services	40.6%	59.4%	31.3%	40.6%
Telecom	28.6%	71.4%	57.1%	64.3%
Travel / Ticketing / Hospitality / Entertainment / Leisure	31.4%	68.6%	31.4%	47.1%

Processing Mobile Channel Payments

Another important aspect of the mobile channel is being able to accept international transactions and support multiple payment methods via mobile devices. Often this requires merchants to partner with more than one payment processor. About 45 percent of merchants require more than one processor to facilitate mobile channel payments, including 12 percent that are using four or more processors. About 55 percent of merchants are able to address all of their mobile payment needs with one processor, however, 35 percent of merchants do not know or do not track how many mobile transactions are international while another 35 percent say less than 10 percent of their mobile orders are from abroad.

Number of Processors Required for the Mobile Channel

11.5%

55.5%

33%

- 1
- 2 – 3
- 4+
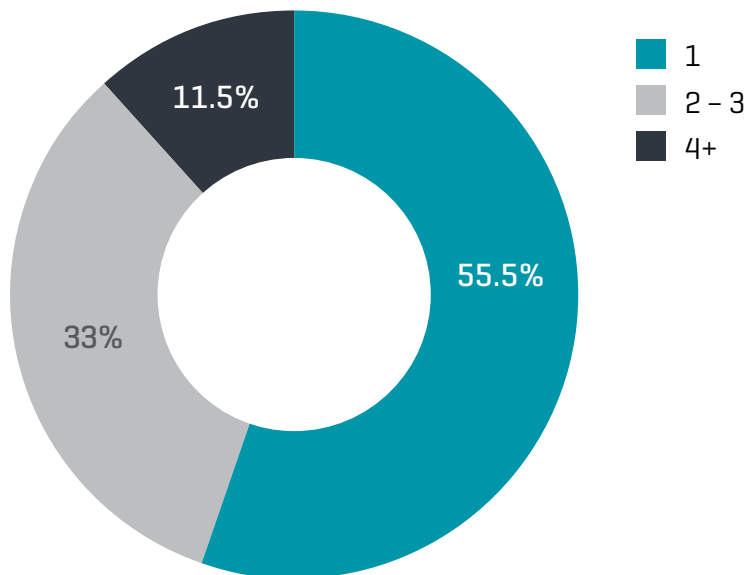
The two most common reasons merchants require multiple processors are to support international payments (45 percent) and multiple mobile payment options (62 percent). Nearly one-third of merchants go through multiple processors because one offers more competitive rates for processing payments in different countries. Consumers go to merchants to shop, but merchants too can (and do) shop around.

Why Merchants Use Multiple Payment Processors

Acquirer	16%
International Payments	44.7%
Payment Options Supported	61.7%
Pricing	31.9%
Other	10.6%
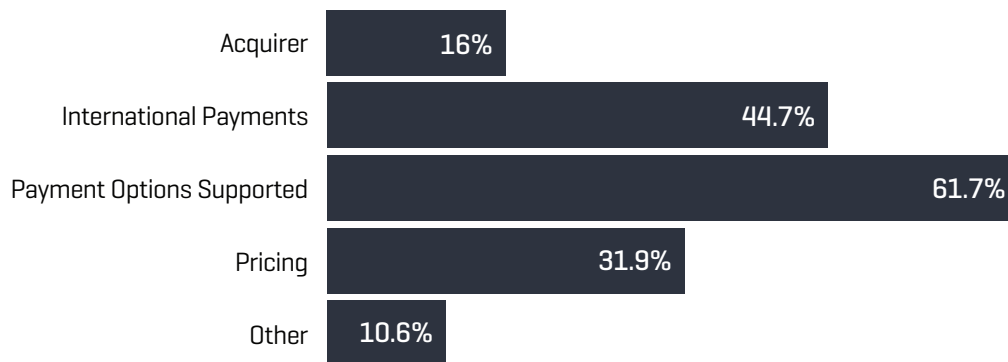
The State of Mobile Fraud

Mobile Payments & Fraud: 2018 Report

The State of Mobile Fraud

Just as payment volume and payment methods have realized significant growth and evolution over the six years of the Mobile Payments and Fraud Survey, there has been significant growth and changes with respect to fraud in the mobile channel. To gain understanding and perspective on the current state of mobile fraud, the remaining portion of the Mobile Payments and Fraud Survey Report focuses on the below points while comparing results across different merchants and over the past several years:

- The payment channels merchants believe are at greatest risk for fraud

- Increase (or decrease) in mobile fraud attempts over the past twelve months

- The use of specialized tools and a different fraud strategy for the mobile channel

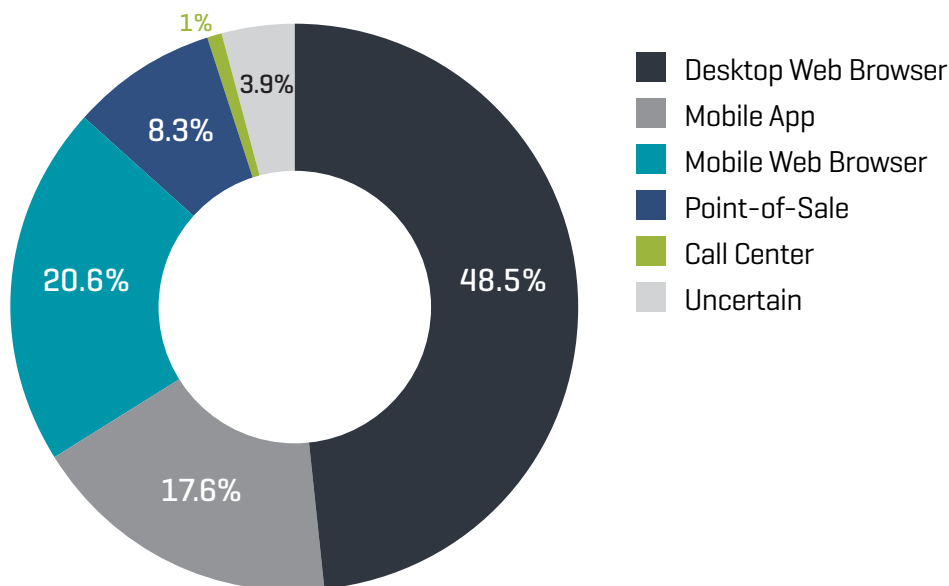- The specific fraud prevention tools merchants deploy in the mobile channel

Key Takeaways

- Merchants have become more relax with mobile fraud management, a trend that has continued for the third consecutive year. Just half believe the mobile channel requires specialized tools for managing risk while only 17 percent employ a separate a fraud strategy catered to the mobile channel.

- Mobile fraud is keeping pace with overall mobile channel growth. The share of merchants who said that mobile fraud increased last year grew by nearly 50 percent, following 70 percent year-over-year growth the year before.

- Higher revenue merchants are significantly more likely to have a separate mobile fraud strategy relative to lower revenue merchants. Higher revenue merchants use about 5 different tools or services for managing mobile fraud risk on average, compared to an average number of 2.85 mobile fraud detection tools used by lower revenue merchants.

- The top three most used tools or techniques for mobile fraud detection are Address Verification (AVS), velocity checks and Card Verification Value (CVV) checks, two of which (AVS and CVV) are not very strong in terms of fraud detection.

Is the Mobile Channel Higher Risk?

Understanding the current state of mobile fraud began with asking respondents which channel they believe represents the greatest fraud risk to their organization. Nearly half of merchants stated that traditional eCommerce, consumers shopping from desktop browsers, is still their highest risk channel. Mobile web browser transactions are the next most likely to be considered the highest fraud risk, as indicated by about 21 percent of merchants, followed by 18 percent of merchants who say mobile app payments are the highest risk. When controlling for merchants who do not currently support mobile payments, the share of merchants who say that the mobile web browser and mobile app channels are the highest risk increases to 23 and 20 percent, respectively.

Broken down by type of merchant, dating and social sites (80 percent) and health/beauty merchants (73 percent) are the most likely to say desktop web browser transactions are the highest fraud risk. Money movement or remittance organizations are the most likely to report the mobile channel being highest risk, as half of these merchants list either mobile app or mobile web browser transactions as the highest fraud risk. More than 35 percent of digital download or streaming, hardware/home improvement and jewelry merchants each indicated that mobile app or mobile web browser transactions are the highest risk channels.

Channel With the Greatest Risk

Legend:
- Desktop Web Browser
- Mobile App
- Mobile Web Browser
- Point-of-Sale
- Call Center
- Uncertain

Values: 48.5%, 17.6%, 20.6%, 8.3%, 1%, 3.9%

More than 38 percent of merchants overall consider the mobile channel higher risk than desktop eCommerce, or 43 percent of merchants when excluding those who don't support the mobile channel today. This is up from just over 25 percent of merchants last year, and back in-line with what merchants reported in 2015 and 2016.

Merchants Who Consider Mobile Channel To Be Riskier than Web eCommerce

2015: 43.9%
2016: 40.9%
2017: 25.1%
2018: 38.2%
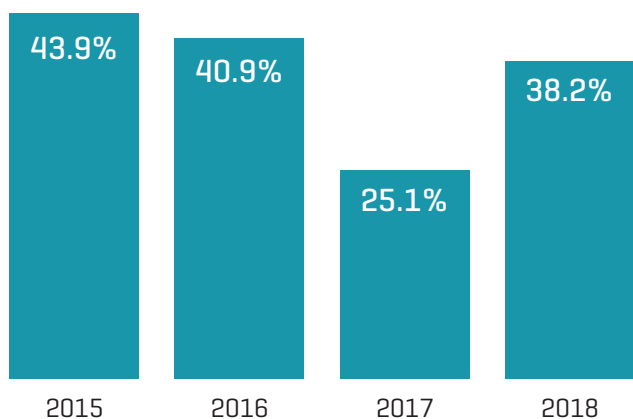
Is Mobile Fraud Increasing?

Keeping up with the state of mobile fraud also includes understanding whether fraud in the mobile channel is growing and if so, by how much. About 35 percent of merchants do not track mobile fraud or do not know whether mobile fraud attempts increased or decreased from last year. After excluding these respondents, 58 percent of remaining merchants definitively stated "Yes," that fraud attempts in the mobile channel are up from last year, compared to 34 percent who said mobile fraud attempts remained the same and just 8 percent who reported a decline.

More than 75 percent of financial institutions and lenders, as well as food and beverage merchants, say that mobile fraud attempts increased last year, while more than two-thirds of digital streaming/download, health/beauty merchants and dating social sites say the same. There are 16 industries (out of 19) where more than half of merchants said mobile fraud attempts have increased over the past twelve months.

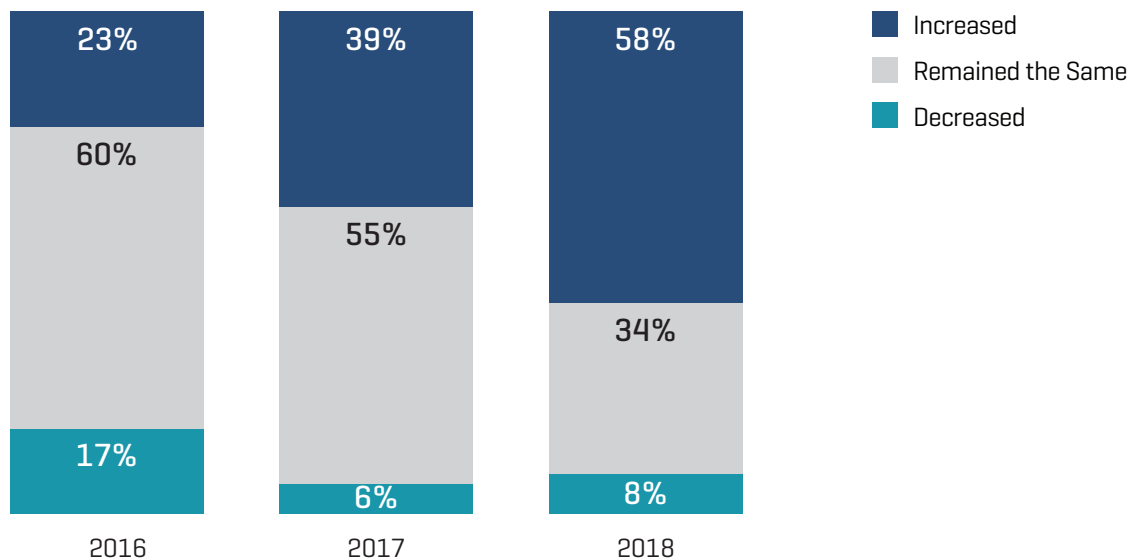**Change in Mobile Fraud Attempts Last Year**

5.3%
22.2%
34.8%
37.7%

- Decreased
- Remained the Same
- Increased
- I Don't Know
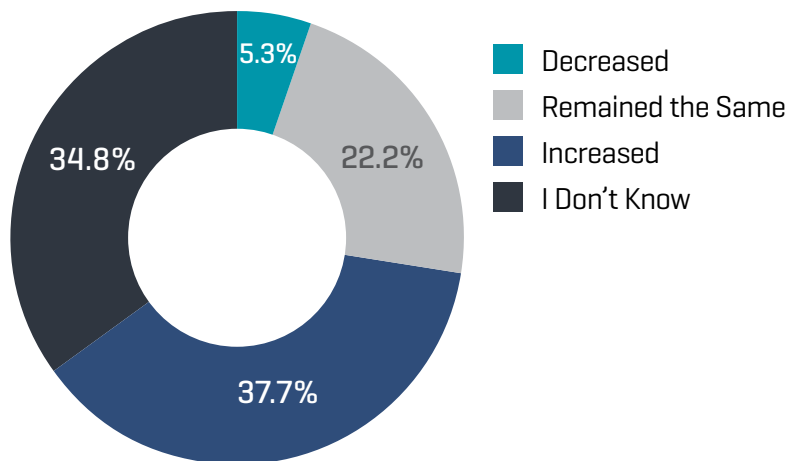
Change in Mobile Fraud Attempts Last Year (Excluding Merchants that Don't Know)

- 8.1% Decreased
- 34.1% Remained the Same
- 57.8% Increased
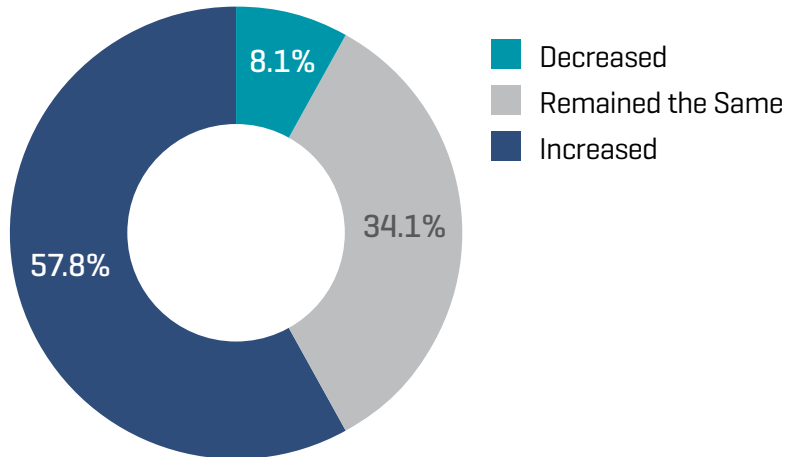
Relative to last year's Mobile Payments and Fraud Survey, both the share of merchants reporting that the mobile channel is higher risk and who reported an increase in mobile fraud attempts have increased. This marks the second consecutive year in which the share of merchants reporting an increase in mobile fraud attempts grew significantly, increasing from 23 to 39 percent of merchants in 2017 (70 percent year-over-year increase), then growing to 58 percent of merchants today (49 percent year-over-year increase).

Change in Mobile Fraud Attempts from Previous Year

- Increased
- Remained the Same
- Decreased

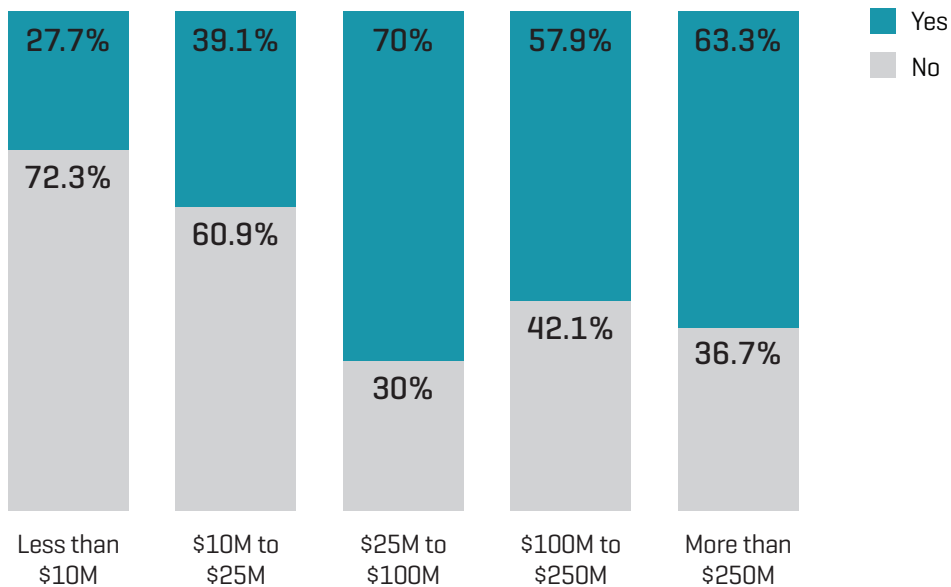|	2016	2017	2018
Increased	23%	39%	58%
Remained the Same	60%	55%	34%
Decreased	17%	6%	8%

Mobile Channel Fraud Prevention

Each year the Mobile Payments and Fraud Survey has included a question asking merchants whether they believe the mobile channel requires additional or specialized tools for managing risk relative to traditional or desktop eCommerce. While figures have fluctuated over the six years of this annual study, 2018 marks the lowest share yet of merchants who believe that the mobile channel does require specialized tools. While the portion of merchants who believe they need additional tools to manage mobile fraud risk has hovered between two-thirds and three-quarters of those surveyed over the previous five years, just half of merchants today believe the mobile channel requires specialized tools or services.

Does Mobile Channel Need Specialized Tools for Risk Management?

|	2013	2014	2015	2016	2017	2018
Yes	63%	75%	72%	65%	71%	50%
No	37%	25%	28%	35%	29%	50%
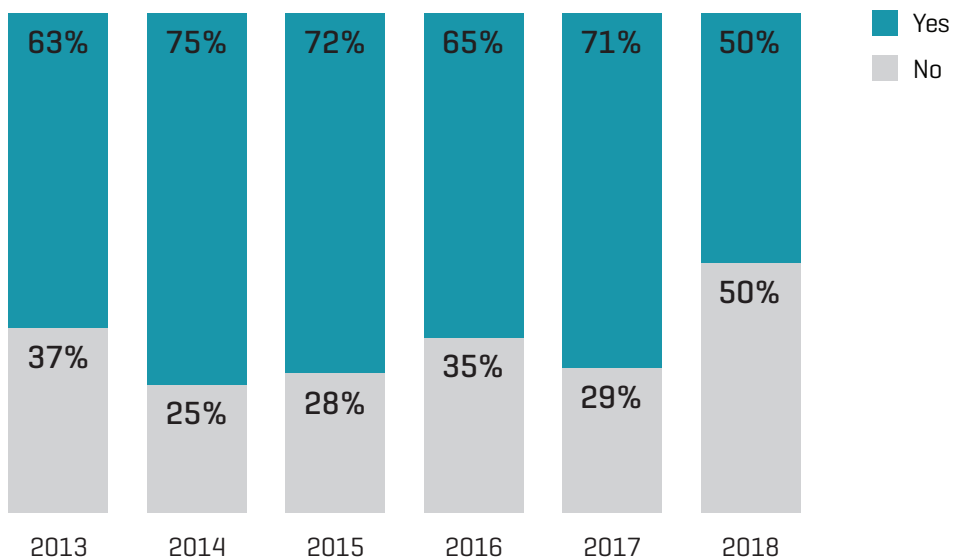
Broken down by merchant revenue, there is a notable disparity between higher and lower revenue merchants who believe the mobile channel requires specialized tools, which is likely influenced by higher revenue merchants being more likely to actually have specialized risk management tools and services for the mobile channel that differ from what is used with desktop web eCommerce. Just 28 percent of merchants with annual revenue less than $10 million believe the mobile channel requires specialized tools, compared to more than 63 percent of merchants with annual revenue greater than $250 million.

Does Mobile Channel Need Specialized Tools for Risk Management? [By Revenue]

					Legend
27.7%	39.1%	70%	57.9%	63.3%	■ Yes
72.3%	60.9%	30%	42.1%	36.7%	■ No
Less than $10M	$10M to $25M	$25M to $100M	$100M to $250M	More than $250M	

Similar to how 35 percent of merchants don't know whether mobile fraud attempts are growing or shrinking, 23 percent of respondents aren't sure whether their risk management strategies differ between the mobile and web eCommerce channels. Neither of these figures are reassuring, nor is the fact that 60 percent of merchant respondents definitively said "No," they do not have a separate mobile risk strategy. Just 17 percent of merchants overall do.

Mobile Fraud Strategy Differs from Web eCommerce Fraud Strategy

16.7%

23.4%

59.8%

■ I Don't Know
■ No
■ Yes
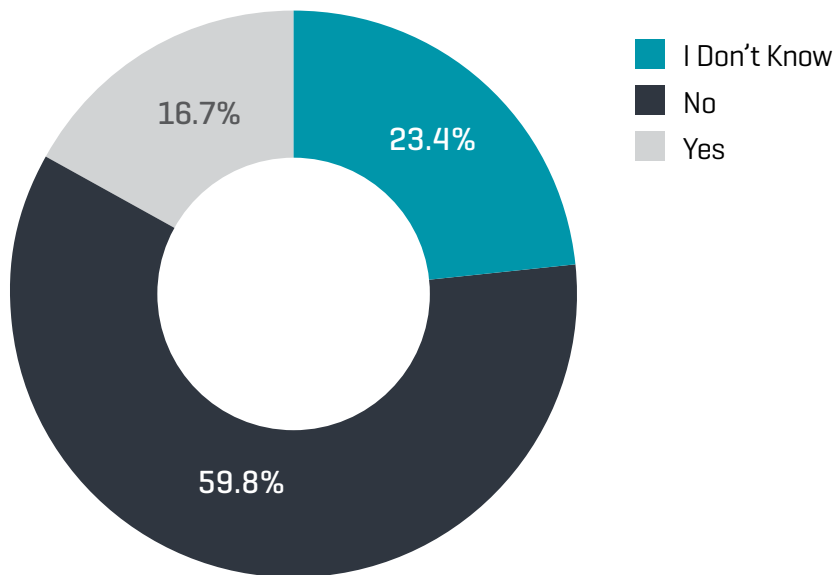
Again there is a significant disparity between the highest revenue (more than $250 million per year) and lowest revenue (less than $10 million per year) merchant groups. Whereas one-third of the highest revenue merchants have separate fraud strategies for the desktop web and mobile commerce channels, less than 10 percent of the lowest revenue merchant group can say the same. In fact, it is primarily the highest revenue merchants that have separate risk management strategies across mobile and traditional eCommerce channels. Less than 15 percent of all merchants with annual revenue less than $250 million deploy multiple risk management strategies depending on the channel.

Mobile Fraud Strategy Differs from Web eCommerce Fraud Strategy (By Revenue)

| Revenue	Yes	No	I Don't Know
Less than $10M	9%	69%	22%
$10M to $25M	13%	79%	8%
$25M to $100M	15%	55%	30%
$100M to $250M	14%	67%	19%
More than $250M	33%	49%	18%

Legend:
- Yes
- No
- I Don't Know
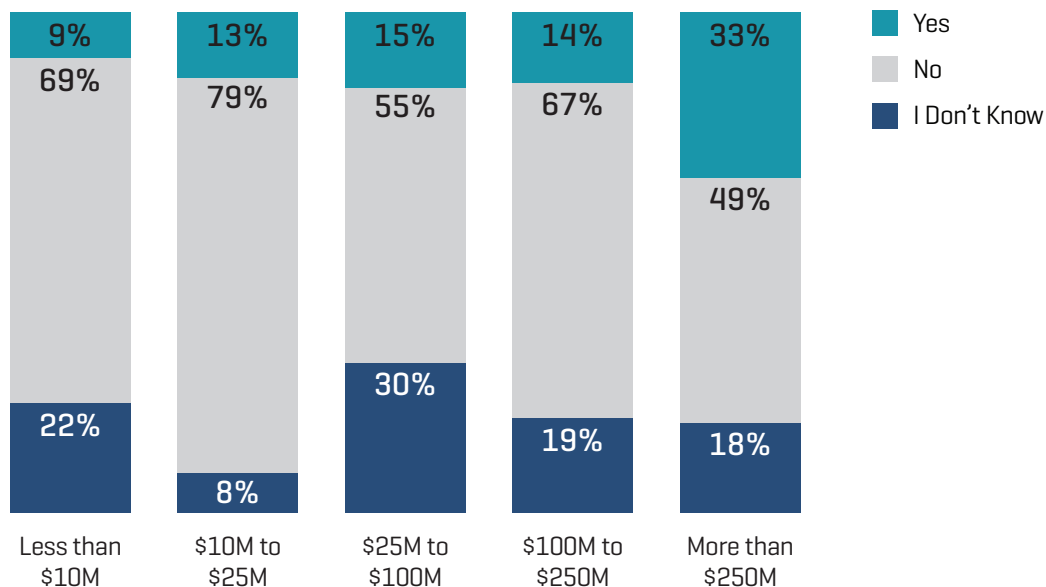
Tools Deployed to Combat Mobile Fraud

The majority of merchants surveyed, over 52 percent, indicated they are using third party tools or service providers to manage risk and detect fraud in the mobile channel. One-third do not use third party services, either managing mobile channel fraud entirely in-house or not managing it at all. Fifteen percent of respondents were uncertain.

Nearly 90 percent of merchants surveyed are applying at least some risk management tools or techniques to detect fraud in the mobile channel, whether that's via third party providers, home grown solutions or both. The technique most commonly used in the mobile channel is the CVV or card verification value check, a data point that many fraudsters have compromised with the card. Fraud scoring is the next most common risk management service utilized in the mobile channel, followed by Address Verification Services (AVS), which like CVV checks, can miss a lot of fraud attempts where this information is compromised along with the payment card being used.

Merchants Using 3rd Party Solutions for Mobile Fraud Detection

- No — 33%
- Yes — 52.2%
- Uncertain — 14.8%
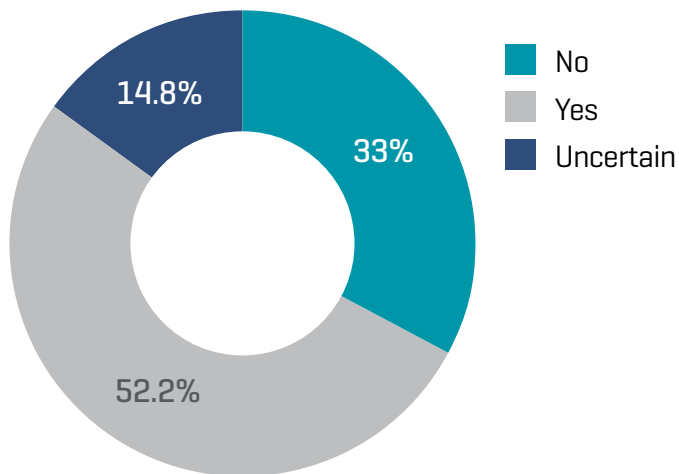
More than 83 percent of merchants are using two or more fraud prevention tools or techniques in the mobile channel, while two-thirds are employing three or more and 25 percent are utilizing seven or more tools or services. One-in-three merchants use identity authentication in the mobile channel while about one-in-four are currently using velocity checks, device identification and a rules engine. Mobile geolocation and 3D secure consumer authentication programs like Verified by Visa and MasterCard SecureCode are each used in the mobile channel by about one-in-five merchants.

Mobile Fraud Detection Tools and Services Used by Merchants Today

Tool/Service	Percentage
3D Secure	20.2%
AI / Machine Learning	18.2%
Authentication	33%
AVS (Address Verification Service)	38.9%
Biometrics	1%
CVV (Card Verification Value)	62.1%
Device Indentification	26.6%
Fraud Scoring	43.3%
Mobile Geolocation	21.7%
Mobile Malware Detection	5.9%
Mobile SDK	6.4%
NFC (Near Field Communication)	3.4%
OTP (One Time PIN)	6.9%
Rules Engine	24.6%
Secure Mobile Payment	13.8%
Telephone Number Identification	18.2%
Text Messaging (SMS)	11.8%
Velocity Checks	25.1%
Other	3.9%
None of the Above	11.3%

Comparing the use of various risk management tools and techniques in the mobile channel over the past several years, machine learning and mobile geolocation are the techniques which have grown the most in terms of merchant use. AI or machine learning was utilized by just 5 percent of merchants for mobile channel transactions in 2015, compared to over 18 percent of merchants today. Use of mobile geolocation has more than doubled from 9 percent to 22 percent of merchants over the same time frame.

In the 2018 and 2017 Mobile Payments and Fraud Surveys, the top three most used fraud detection tools or services in the mobile channel have been the same: CVV checks, fraud scoring and AVS. Whereas use of CVV checks increased from last year, use of fraud scoring and AVS each fell. Use of mobile malware detection is down to 6 percent of merchants after being utilized by 9 to 11 percent of merchants over the previous three years. Fewer merchants surveyed were using device identification and velocity checks relative to last year, while the use of secure mobile payment method remained constant.

Tools and Services Used to Prevent Mobile Fraud (By Year)

Tools and Services Used to Prevent Mobile Fraud	2015	2016	2017	2018
3D Secure Cardholder Authentication (VbV, SecureCode)	0.0%	0.0%	18.4%	20.2%
AI / Machine Learning	4.8%	10.9%	15.2%	18.2%
AVS	15.5%	30.0%	46.2%	38.9%
Biometrics	0.0%	0.0%	7.6%	1.0%
CVV	0.0%	0.0%	58.3%	62.1%
Device ID	27.3%	38.2%	37.7%	26.6%
Fraud Scoring	25.1%	37.3%	48.4%	43.3%
Mobile Malware Detection	10.2%	10.9%	9.0%	5.9%
Mobile Geolocation	9.1%	14.5%	27.8%	21.7%
NFC	3.7%	7.3%	2.2%	3.4%
Rules	29.4%	46.4%	0.0%	24.6%
OTP's	0.0%	0.0%	4.5%	6.9%
Secure Mobile Payment Methods	26.7%	20.9%	13.9%	13.8%
Telephone Number Identification	17.1%	16.4%	13.9%	18.2%
Text Messaging - SMS	12.3%	15.5%	6.7%	11.8%
Velocity Checks	17.1%	30.9%	34.5%	25.1%
None	0.0%	0.0%	11.7%	11.3%

There are notable differences between merchants based on the types of goods and services they sell online as well. Industries with high average order amounts and higher fraud risk, such as banks and lenders, automotive/power sports and jewelry merchants, are significantly more likely to be utilizing identity authentication in the mobile channel. At least 60 percent of organizations in each of these three industries supports authentication for mobile transactions, compared to 33 percent of merchants overall.

More than half of dating/social sites and jewelry merchants are using device identification in the mobile channel, as well as nearly half of health/beauty and pets/toys/sporting goods merchants, compared to 27 percent of merchants using device ID in the mobile channel overall. Merchants

selling jewelry, health/beauty and pets/toys/sporting goods are also the most likely to be using fraud scoring. Velocity checks are most likely to be used by dating/social sites, jewelry and kitchen/home furnishings merchants.

Based on the types of goods or services a merchant sells, the average number of mobile fraud detection tools or services in use ranges from 3.36 to 5.71. Dating and social sites (5.71), games/gambling (5.64) and jewelry merchants (5.42) use the most risk management tools and techniques in the mobile channel, while digital download/streaming (3.92), hardware/home improvement (3.85) and food/beverage merchants (3.37) use the fewest on average.

Tools and Services Used to Prevent Mobile Fraud [By Industry]

Merchant Industry	3D Secure	AI / Machine Learning	Authenti-cation	AVS	Biometrics	CVV	Device ID	Fraud Scoring	Mobile Geo-Location	Mobile Malware Detection	Mobile SDK	NFC	OTP	Rules	Secure Mobile Pay Methods	TNI	SMS	Velocity Checks	Other	None
Apparel / Accessories	22%	16%	39%	45%	2%	73%	25%	45%	25%	8%	4%	4%	8%	24%	18%	22%	12%	29%	4%	14%
Automotive / Powersports	8%	15%	62%	46%	8%	54%	23%	38%	23%	8%	0%	0%	8%	8%	31%	23%	15%	8%	0%	8%
Bank / Credit Union / Lender / Insurance	27%	0%	64%	36%	9%	45%	27%	36%	18%	36%	9%	9%	36%	9%	45%	18%	18%	18%	0%	9%
Dating / Social	43%	29%	43%	14%	0%	57%	57%	43%	43%	0%	29%	14%	0%	43%	43%	43%	14%	43%	0%	14%
Digital Streaming / Downloads / Education	28%	8%	24%	40%	8%	72%	20%	32%	16%	8%	8%	16%	12%	16%	28%	20%	12%	12%	4%	8%
Electronics / Computers	17%	17%	58%	42%	8%	50%	33%	46%	21%	4%	8%	4%	8%	25%	25%	29%	21%	29%	4%	0%
Food / Beverage	11%	11%	42%	37%	0%	63%	26%	37%	11%	5%	0%	0%	0%	21%	21%	11%	21%	11%	5%	5%
Games / Gambling	57%	21%	50%	36%	14%	50%	36%	57%	21%	14%	14%	14%	14%	29%	36%	29%	29%	36%	0%	7%
Hardware / Home Improvement	15%	5%	45%	50%	5%	60%	20%	40%	15%	5%	5%	5%	10%	20%	20%	15%	25%	10%	10%	5%
Health / Beauty	4%	12%	48%	44%	4%	72%	44%	52%	20%	0%	0%	0%	4%	20%	20%	12%	8%	28%	0%	8%
Jewelry	5%	11%	63%	68%	5%	74%	53%	63%	42%	0%	0%	0%	5%	42%	26%	26%	11%	42%	0%	5%
Kitchen / Home Furnishings	13%	4%	39%	52%	4%	65%	39%	39%	26%	0%	0%	4%	4%	39%	26%	17%	13%	39%	9%	4%
Money Movement / Transfer	20%	0%	40%	60%	0%	60%	40%	20%	20%	0%	0%	0%	0%	0%	40%	0%	20%	0%	0%	0%
Not for Profit	14%	0%	57%	71%	0%	86%	29%	43%	29%	14%	14%	0%	14%	14%	29%	14%	29%	0%	0%	14%
Other	33%	33%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	33%
Pets / Toys / Sporting Goods	0%	8%	46%	46%	8%	54%	46%	54%	31%	8%	0%	0%	0%	38%	23%	8%	15%	23%	0%	0%
Professional Services	26%	10%	42%	23%	10%	35%	19%	23%	23%	3%	10%	10%	23%	13%	19%	19%	19%	6%	6%	16%
Telecom	31%	15%	54%	23%	8%	62%	54%	31%	8%	8%	15%	15%	15%	23%	23%	15%	23%	8%	0%	0%
Travel / Ticketing / Hospitality / Entertainment / Leisure	18%	26%	26%	38%	2%	58%	28%	48%	34%	8%	8%	2%	4%	32%	12%	22%	8%	38%	2%	16%

Conclusion

Mobile Payments & Fraud: 2018 Report

Conclusion

The Mobile Payments and Fraud Survey: 2018 Report showed growth in mobile channel sales as well as mobile fraud attempts, yet at the same time, merchants revealed signs of regression in terms of support for the mobile channel and how they manage or address fraud in the mobile channel. Some of the key findings from this year's study include:

After the mobile channel sales stayed relatively flat as a share of total revenue in 2017, mobile channel sales grew again this year and expectations for mobile channel growth are now higher than ever.

- Just two percent of merchants expect the mobile channel to represent 5 percent or less of their total revenue by 2020, which is astounding considering that half of all merchants earned less than 5 percent of their total revenue in the mobile channel in 2013.

- The share of merchants earning less than 5 percent of their total revenue in mobile channel fell from half of all merchants in 2013 to about one-third in 2015, declining again to about one-in-five merchants in 2016 and 2017, to now just 14 percent of merchants earning less than 5 percent of their total revenue in the mobile channel today.

- Just 2-3 percent of merchants earned more than half of their total revenue in the mobile channel between 2013 and 2015, compared to 17 percent of merchants earning the majority of their revenue in the mobile channel today.

For the third consecutive year, merchants are showing signs of complacency and regression in terms of capabilities and the level of importance they place on the mobile channel and managing mobile fraud risk. This has continued despite the fact that mobile channel fraud has continued to increase over the same three-year time frame.

- The share of merchants who say that the mobile channel requires specialized tools for risk management is at the lowest recorded level in all six years of this study. Only half of merchants say the mobile channel requires additional or specialized tools, compared to between two-thirds and three-quarters of merchants in each of the past studies.

- Merchants are less likely to say it is "Very Important" to be able to detect transactions coming from mobile devices, down to 34 from 47 percent of merchants last year. The share of merchants who are not able to detect when a transaction originates from a mobile device increased from 14 to 27 percent.

- More than one-third of merchants do not track or know whether mobile fraud increased last year, but 58 percent of merchant who do track this said mobile fraud attempts are growing. Just 17 percent of merchants definitively state they have separate risk management strategies for mobile versus desktop eCommerce channels, and this is primarily the highest revenue merchants.

- For two consecutive years the share of merchants reporting an increase in mobile channel fraud has grown significantly, increasing 70 percent year-over-year from 2016 to 2017, before growing to 58 percent of merchants in 2018 marking a 49 percent year-over-year increase.

Appendix

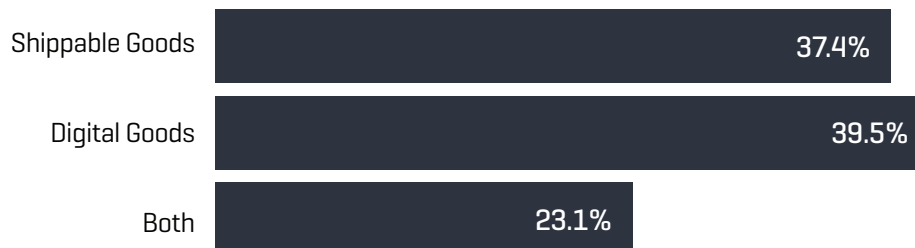## Mobile Payments & Fraud: 2018 Report

Merchants Who Participated in the Survey

Nearly 600 merchants participated in the 2018 Mobile Payments and Fraud Survey, representing merchants of all sizes across different channels and types of goods or services sold. About 38 percent of merchants surveyed have annual revenue less than $10 million per year, while 27 percent earn at least $250 million per year in revenue. Nearly one-in-four merchants surveyed sell both digital and tangible goods online, while 40 percent sell digital goods exclusively and 37 percent only sell shippable goods. More than 60 percent of merchants sell shippable goods overall (with or without digital goods).

Merchants by Annual Revenue

- 37.8% Less than $10M
- 13.4% $10M to $25M
- 11% $25M to $100M
- 10.6% $100M to $250M
- 27.2% More than $250M
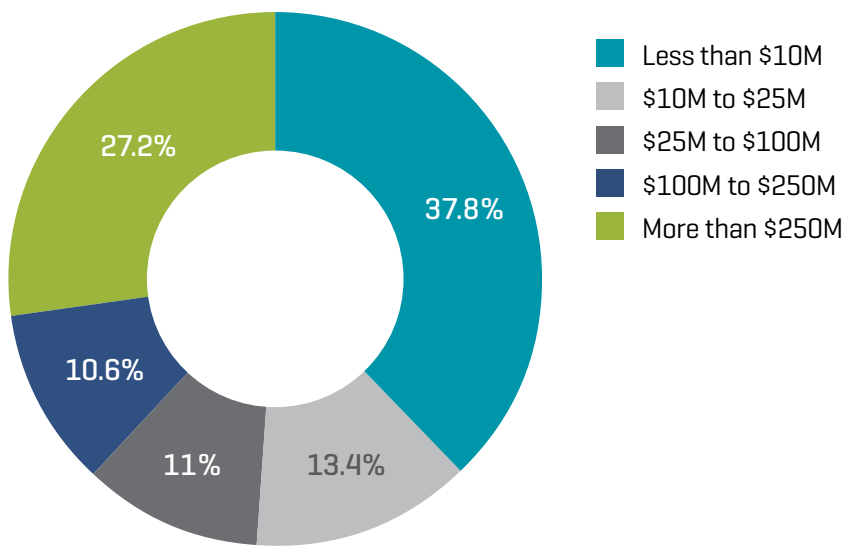
Physical and Digital Goods Merchants

- Shippable Goods: 37.4%
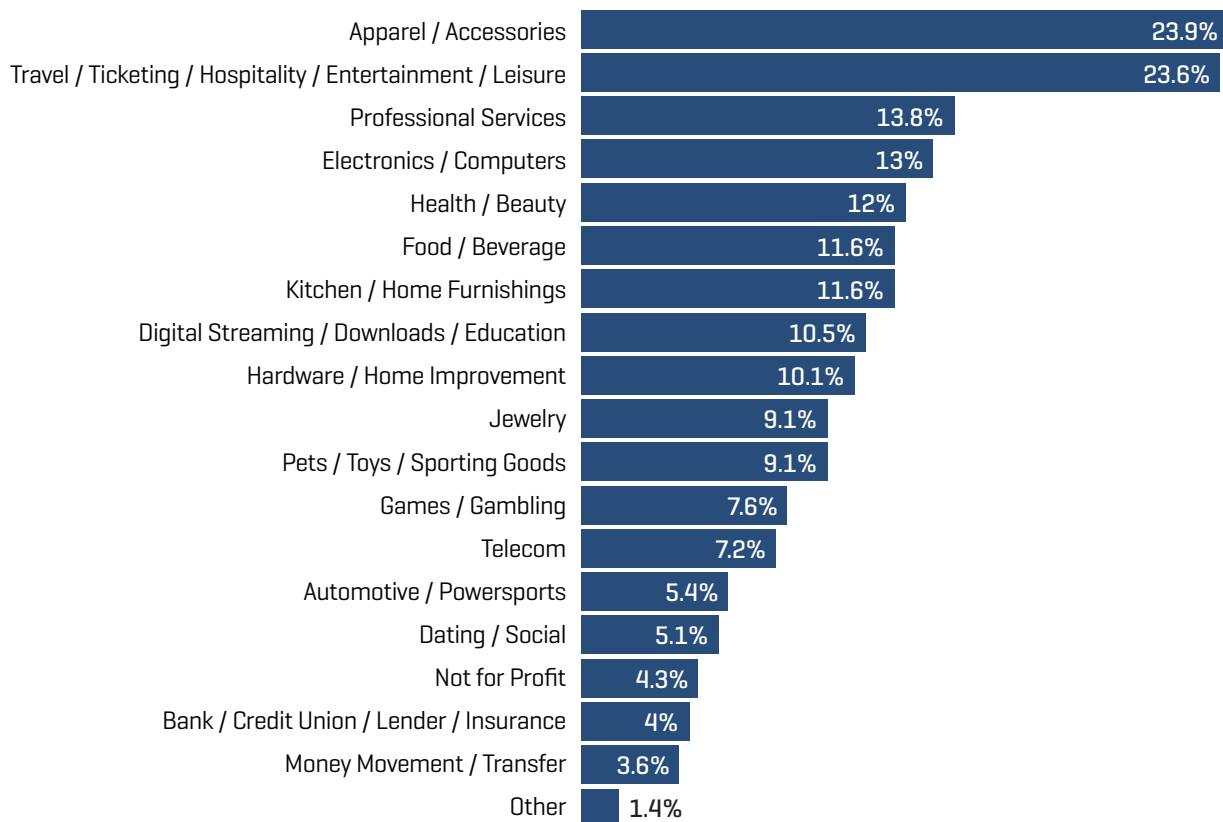- Digital Goods: 39.5%
- Both: 23.1%

Of the merchants that participated in the survey, over 70 percent are doing business in the United States and 44 percent are doing business in Canada. Nearly 45 percent are doing business in Western Europe compared to 33 percent in Eastern Europe, while 40 percent are doing business in Asia.

Countries and Regions Where Merchants are Doing Business Today

Region	Percentage
United States	71%
Western Europe	44.8%
Canada	43.7%
Asia	39.5%
Australia	36.4%
Eastern Europe	32.9%
Mexico & Central America	31.1%
South America	29%
Middle East	25.5%

Those surveyed also represent a wide variety of merchants in terms of the goods and services they sell in the online and mobile channel. About 24 percent of those surveyed sell apparel and accessories while another 24 percent are in the event ticketing, entertainment or hospitality industries. Merchants in high risk market segments, like computers and electronics (13 percent), health/beauty (12 percent) and jewelry (9 percent), are also represented in the Mobile Payments and Fraud Survey.

Types of Goods and Services Sold

| Category	Percentage
Apparel / Accessories	23.9%
Travel / Ticketing / Hospitality / Entertainment / Leisure	23.6%
Professional Services	13.8%
Electronics / Computers	13%
Health / Beauty	12%
Food / Beverage	11.6%
Kitchen / Home Furnishings	11.6%
Digital Streaming / Downloads / Education	10.5%
Hardware / Home Improvement	10.1%
Jewelry	9.1%
Pets / Toys / Sporting Goods	9.1%
Games / Gambling	7.6%
Telecom	7.2%
Automotive / Powersports	5.4%
Dating / Social	5.1%
Not for Profit	4.3%
Bank / Credit Union / Lender / Insurance	4%
Money Movement / Transfer	3.6%
Other	1.4%

At least one-third of merchants in the computers/electronics, kitchen/home furnishings, hardware/ home improvement, money movement and pets, toys and sporting goods industries earn more than $250 million per year in revenue. Digital streaming or download merchants, along with those in the professional services and automotive/power sports industries, are the most likely to report annual revenue less than $10 million.

Mobile Payments and Fraud Survey respondents also represent key roles and responsibilities within their organizations. Nearly 44 percent of those surveyed are decision makers while 54 percent are users and influencers.

Types of Goods and Services Sold (By Revenue)

Type of Goods/Services Sold	< $10 Million	$10-25 Million	$25-100 Million	$25-100 Million	$100-250 Million	Revenue Unknown
Apparel / Accessories	22.7%	15.2%	9.1%	13.6%	30.3%	9.1%
Travel / Ticketing / Hospitality / Entertainment / Leisure	23.1%	12.3%	12.3%	7.7%	29.2%	15.4%
Professional Services	44.7%	2.6%	5.3%	5.3%	23.7%	18.4%
Electronics / Computers	16.7%	13.9%	11.1%	8.3%	33.3%	16.7%
Health / Beauty	21.2%	12.1%	12.1%	6.1%	30.3%	18.2%
Food / Beverage	28.1%	6.3%	3.1%	9.4%	40.6%	12.5%
Kitchen / Home Furnishings	25.0%	15.6%	6.3%	6.3%	37.5%	9.4%
Digital Streaming / Downloads / Education	44.8%	6.9%	10.3%	13.8%	13.8%	10.3%
Hardware / Home Improvement	14.3%	14.3%	7.1%	7.1%	39.3%	17.9%
Jewelry	28.0%	20.0%	4.0%	8.0%	28.0%	12.0%
Games / Gambling	23.8%	9.5%	4.8%	0.0%	23.8%	38.1%
Pets / Toys	10.0%	15.0%	5.0%	15.0%	45.0%	10.0%
Telecom	25.0%	10.0%	5.0%	25.0%	20.0%	15.0%
Automotive / Powersports	46.7%	13.3%	0.0%	6.7%	20.0%	13.3%
Dating / Social	21.4%	14.3%	14.3%	14.3%	21.4%	14.3%
Not for Profit	33.3%	8.3%	0.0%	0.0%	16.7%	41.7%
Bank / Credit Union / Lender / Insurance	27.3%	9.1%	0.0%	0.0%	45.5%	18.2%
Money Movement / Transfer	10.0%	20.0%	0.0%	10.0%	40.0%	20.0%
Other	25.0%	50.0%	25.0%	0.0%	0.0%	0.0%

Role Within Organization

Legend:
- Buyer
- Decision Maker
- Influencer
- User

- 3.8%
- 43.8%
- 29.8%
- 22.5%
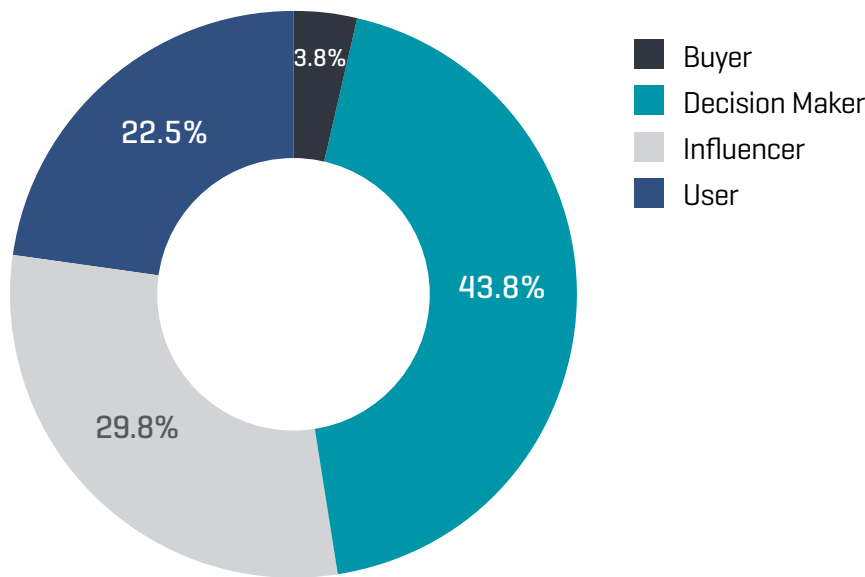
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