



Use of **Consumer Authentication** in eCommerce

Annual Survey, 2017

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Presented by: CardinalCommerce and The Fraud Practice

Foreword

At CardinalCommerce our mission is to enhance the payments ecosystem for consumers, merchants, card issuers and payment processors. As part of our mission, we have undertaken for the past four years a survey of thousands of organizations across this ecosystem to identify trends in our industry and improve our understanding of market use and sentiments regarding Consumer Authentication programs such as Verified by Visa and Mastercard SecureCode.

I am pleased to share with you the results of the Fourth Annual CardinalCommerce Consumer Authentication Survey. The survey comes at an exciting time in the payments industry. Not only are we seeing significant year-over-year growth in electronic and mobile commerce, but we see new opportunities and new horizons opening up around connected devices and the Internet of Things (IoT). Consider that by 2020, just three short years from now, IoT will account for half of all connected devices, 5.8 billion. Today, what seemed like science fiction only a few years ago, asking a digital assistant to make a purchase for you, is a reality.

Another exciting development this year is the forthcoming implementation of 3D Secure 2.0, which is a giant leap forward for Consumer Authentication. This year's survey – the first to include questions about 3DS 2.0 – found merchants very enthusiastic about the new standard's support for in-app, mobile and non-browser purchases. In addition, nearly half of merchants surveyed said the most important new feature of 3DS 2.0 is the more intuitive consumer experience and merchant integration.

I hope you find our survey to be a valuable resource that will enhance and inform your own business goals and activities. Together we can look forward to a successful and exciting 2017 for our industry.

Fondly,

Tim M. Sherwin

Co-Founder and CEO
CardinalCommerce

Executive Summary

Over 54 percent of organizations use, offer, or support Consumer Authentication, higher than any other year of the survey.

The 2017 CardinalCommerce Consumer Authentication Survey found consistent use of Consumer Authentication programs by merchants worldwide, along with nearly 25 percent year-over-year growth in the share of merchants only doing business in North America who use these programs. Among the survey's other findings were a shift by merchants away from concerns about the potential for Consumer Authentication programs to result in lost sales, along with increasing merchant support for mobile web commerce and vendor support for mobile apps.

This year marks the fourth edition of Cardinal's Consumer Authentication Survey, which seeks to understand market use and sentiments regarding Consumer Authentication programs such as Verified by Visa and Mastercard SecureCode. The 2017 survey was conducted between October and November, 2016 and included hundreds of participants worldwide. As with previous years, the survey included merchants, fraud and eCommerce vendors, payment providers, card issuers, and card associations.

Two-thirds of merchants, whether using Consumer Authentication today or not, say these programs are here to stay.

For the first time, the 2017 survey included questions about the recently approved update to EMVCo's 3-D Secure protocol – 3DS 2.0. Nearly half of all merchants surveyed said the most important new feature of 3DS 2.0 is the more intuitive consumer experience and merchant integration. Support for in-app, mobile and non-browser purchases was identified as the second most important feature. Nearly 40 percent of merchants not using Consumer Authentication programs today said they are more likely to add them in the future after learning about 3DS 2.0.

Globally, 41 percent of merchants and 54 percent of organizations overall use or support Consumer Authentication as a means of protecting themselves against fraud and false positives, up from 49 percent of all organizations in 2016. Merchants operating in North America however, are behind their counterparts in other regions, with just 39 percent using Consumer Authentication. This compares with 57 percent of merchants in Africa, 50 percent in both Eastern Europe and the Middle East, 49 percent in the European Union, 48 percent in South America, and 39 percent in the Asia Pacific region.

In another significant finding, the share of fraud and eCommerce vendors that are actively selling Consumer Authentication services continued to grow. This grew from 55 percent to 70 percent in 2016 before increasing further to 73 percent this year, and is indicative of an upward trend over all four years in which CardinalCommerce and The Fraud Practice have conducted the survey.

The survey also found that more than half of all merchants not currently using Consumer Authentication are “somewhat likely” or “very likely” to implement such services in 2017. Many merchants also indicated they are more likely to implement Consumer Authentication after learning of the features and benefits of 3DS 2.0.

The average number of factors a merchant considers to determine when authentication should be presented increased from less than 3 in 2016 to 3.2 this year.

This year marked an important change in the primary reason given by merchants as to why they are not using Consumer Authentication. In the prior three years, merchants said the main reason was their concern that such protocols might negatively impact sales conversion. In the 2017 survey, merchants not using Consumer Authentication said it was primarily because online volume or fraud attempts were too low to warrant its use. Concerns around sales conversion fell to the third most cited reason, also behind concerns about the impact Consumer Authentication might have on the user experience.

The share of merchants reporting a negative impact on user experience from Consumer Authentication fell from 38 percent in 2014, the first year of the survey, to 25 percent in 2017.

The recent growth in mobile commerce could be seen in the percentage of fraud and eCommerce vendors (fraud solution providers and eCommerce platforms) offering support for such channels. The 2017 survey found 78 percent of such vendors now support mobile apps, up 12 percent from 2016, while 70 percent support mobile web (browser) commerce.

Nearly 95 percent of merchants who use Selective Presentment look at multiple factors, including 63 percent that consider three or more and 38 percent who look at four or more factors or signals, to decide if authentication should be presented.

Not surprisingly, merchants with less than \$5 million in annual revenues are the least likely to use Consumer Authentication – just 35 percent – but merchants with more than \$50 million in annual revenues do not fare much better at 39 percent. Although higher revenue merchants weren’t all that more likely to be using Consumer Authentication, those that do use these programs tend to be more sophisticated in *how* they use them. Higher revenue and enterprise merchants are much more likely to be using Selective Presentment and consider more factors for deciding when to present authentication relative to SMB merchants.

Comparing merchants that only do business in North America to merchants that do business in one or more regions but not North America, the regional disparity in use of Consumer Authentication becomes even more pronounced. Merchants not doing business in North America are more than twice as likely (80 percent) to use Consumer Authentication than those that only do business in North America (36 percent).

When asked about the value of Consumer Authentication, 53 percent of merchants using such services said that they are “highly valuable,” while an additional 39 percent said they are “somewhat valuable,” according to the survey.

Over half of merchants not using Consumer Authentication today said it is somewhat or very likely that they will implement these services some time in 2017.

While this is a wide gap, the use of Consumer Authentication is actually growing with merchants in both groups. Last year just 29 percent of merchants doing business only in North America used Consumer Authentication (compared with 36 percent today). The percentage of merchants that do not do businesses in North America that are using Consumer Authentication rose from 58 percent to 80 percent. Still, North American merchants fell further behind their counterparts in other regions in their use of Consumer Authentication.

As with prior years, the 2017 survey found significant differences in the use of Consumer Authentication by merchants based upon industry. Industries considered at high risk of fraud tended to have high use of Consumer Authentication. For example, the gaming and transportation services industries both came in at 67 percent use, while travel was at 63 percent. In addition, half of all merchants in Auto Parts and Accessories, Gold, Silver and Precious Metals, Health/Beauty, and Jewelry said they were using Consumer Authentication. All merchants (100 percent) surveyed in the Dating/Social Sites and Office Supplies industries said they were using Consumer Authentication, but those results were considered overstated due to the small sample size for those industries.

Of those merchants surveyed in 2017, 84 percent said they used Verified by Visa and 78 percent said they used Mastercard SecureCode. These results were similar to those found in the prior three surveys. There was a significant drop in the number of merchants using American Express SafeKey (from 23 percent to 3 percent), while surveyed use of JCB J/Secure and Discover ProtectBuy fell to zero for the first time. These results were influenced by an increase in the share of merchants surveyed who only do business in North America and are considered outliers relative to historical survey data.

The Consumer Authentication survey also looked at merchant use of Selective Presentment, or presenting for authentication only those transactions that meet certain criteria (vs. requiring it for every transaction.) Of those merchants using Consumer Authentication in 2017, just 53 percent were employing Selective Presentment, the lowest total in all four years of study. As with prior surveys, merchants that have most recently implemented Consumer Authentication are most likely to use Selective Presentment. Results from the 2017 survey found 100 percent of merchants that implemented Consumer Authentication within the last two years are using Selective Presentment, compared with just 44 percent of those that have employed Consumer Authentication for five or more years.

While there were several new findings uncovered in the 2017 Consumer Authentication Survey, there have been many consistent trends as well. In each of the four years of this study, merchants and organizations overall have ranked the reduction in fraud and liability on covered transactions as the two most important benefits of using Consumer Authentication programs.

Overview of Survey Respondents

The share of merchants who use Consumer Authentication stayed flat, but support for Consumer Authentication across all types of organizations increased from 49 to 54 percent in the past year.

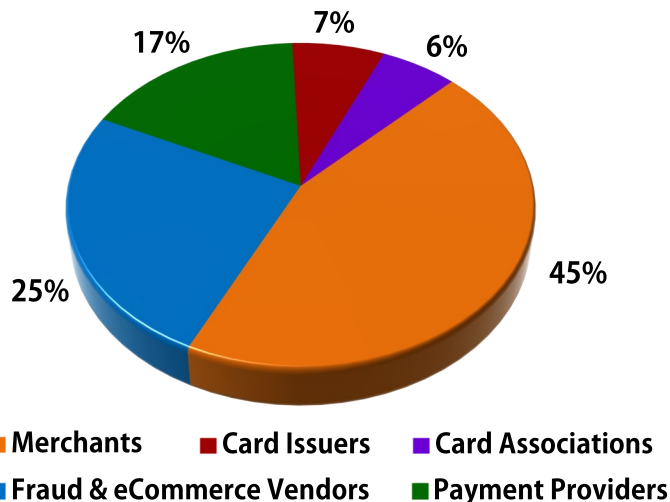
While merchants are the primary type of organization that utilize Consumer Authentication programs, there is a greater payments ecosystem of acquirers and payment service providers, fraud and eCommerce vendors, as well as card associations and card issuers, that support and facilitate the use of Consumer Authentication. The intent of the Annual Consumer Authentication Survey is to reach each of these types of organizations, including those that use or support Consumer Authentication today and those that do not. This diverse sampling of respondents, also spanning organizations of different sizes and across channels, ensures a well-rounded perspective from all constituents.

Many survey respondents, representing hundreds of different organizations, contributed to the 4th Annual Consumer Authentication Survey, representing all parties in the payment and authentication process flow except for the consumer or cardholder. Each year the goal has been to include a relatively even split of merchant versus non-merchant respondents, as well as relatively equal representation of organizations that currently do and currently do not use or support Consumer Authentication. This year's survey was the first where merchants made up less than half of the total survey population, at 45 percent. The 2017 Consumer Authentication Survey is also the first year where more than half of all respondents use or support Consumer Authentication currently, at 54 percent.

Participating survey respondents include each of these types of organizations:

- ⇒ Merchants
- ⇒ Fraud & eCommerce Vendors (Fraud Solution Providers and eCommerce Platforms)
- ⇒ Payment Providers (Acquirers, Payment Service Providers and Gateways)
- ⇒ Card Issuers
- ⇒ Card Associations

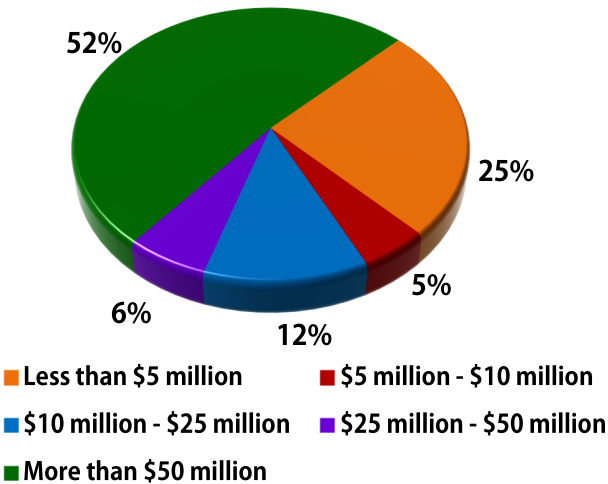
Survey Respondents by Type of Organization



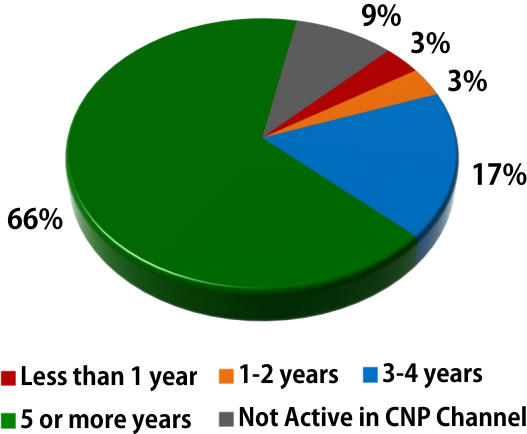
Two-thirds of merchants surveyed have five or more years of CNP channel experience, while over 95 percent operate online, two-thirds support mobile web commerce and 44 percent offer mobile apps.

Comprising close to half of survey respondents merchants again the largest group represented in the survey. While the distribution of merchant respondents has been top heavy each year of the Consumer Authentication Survey, the share of merchant respondents earning more than \$50 million per year in annual revenue fell from two-thirds of all merchants in 2016 to 52 percent this year. Meanwhile the share of merchants surveyed earning less than \$10 million in annual revenue doubled from 15 to 30 percent from last year. Coinciding with the decreasing share of enterprise merchants represented in the survey, 66 percent of merchants have five or more years of experience doing business in the online and/or mobile channel, down from 83 percent last year.

Merchants by Annual Revenue

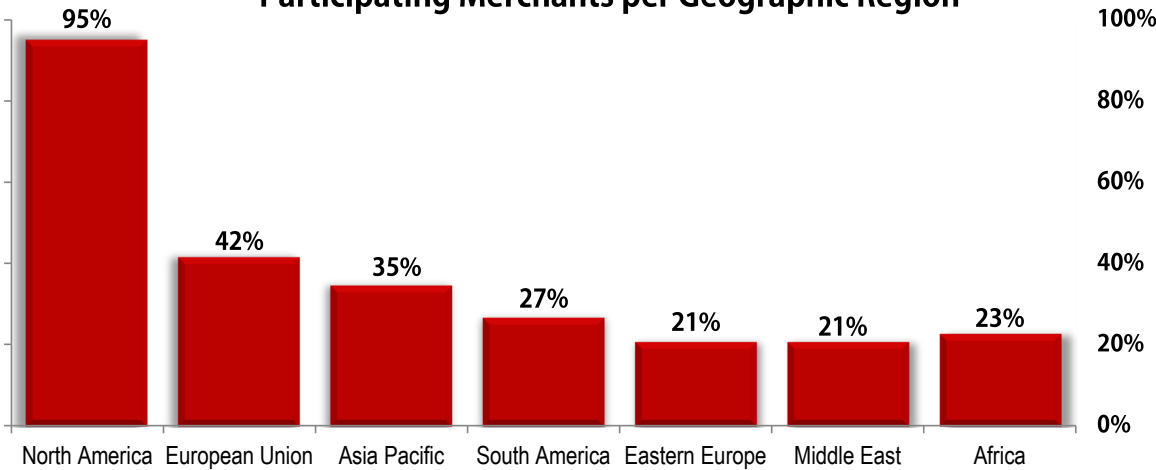


Merchants by CNP Experience



Nineteen out of every twenty merchants surveyed are doing business in North America, and throughout each year of the survey this has been at least 90 percent. What changed in the 2017 Consumer Authentication Survey is the increase in merchants that are only doing business in North America, up from 43 to 54 percent this year. This too is impacted by the growing representation of SMB merchants generating less than \$5 million per year in revenue, of which 64 percent are only doing business in North America, compared to 47 percent of merchants with annual revenues of at least \$50 million. Each major global region is represented by at least 1-in-5 merchants surveyed, while 42 percent merchants are doing business in two or more regions and one-third of merchants are operating in three or more regions. Over 43 percent of the merchants who are doing business in North America are selling goods or services to at least one other region internationally.

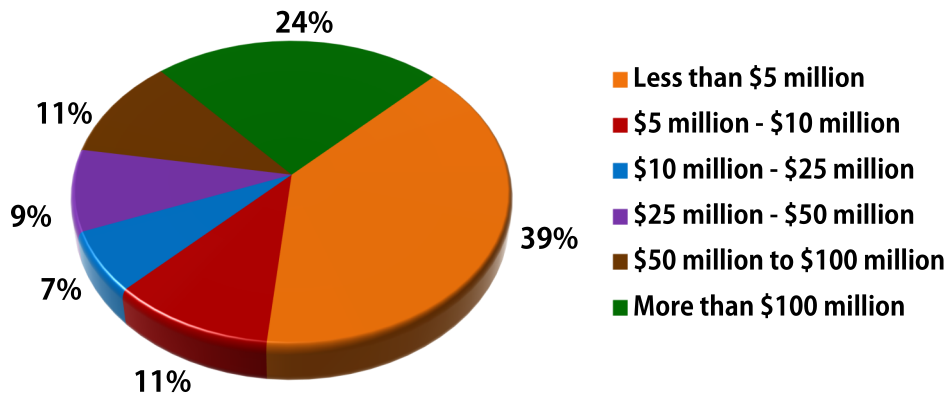
Participating Merchants per Geographic Region



Fraud and eCommerce vendors are 12 percent more likely to offer services with support for mobile apps compared to last year.

Fraud and eCommerce service providers represented exactly one-quarter of the total survey population and are the second largest group of respondents by type of business. Half of these vendors surveyed have annual revenues less than \$10 million while 35 percent generate annual revenues greater than \$50 million. Relative to merchants, notably fewer fraud and eCommerce vendors surveyed are doing business in North America, at 77 versus 95 percent. These organizations are much more active internationally, however, as there are three other regions where about half of these providers are offering services: the European Union, South America and the Asia-Pacific region. Nearly 90 percent of fraud and eCommerce vendors surveyed support services for the online channel while 78 percent support mobile apps and 70 percent support mobile web (browser) commerce. The share of fraud and eCommerce vendors offering services with support for mobile apps is up 12 percent from 2016, while services that support online and mobile web browser payments stayed flat (each up 1 percent, within the margin of error).

Fraud & eCommerce Vendors by Annual Revenue

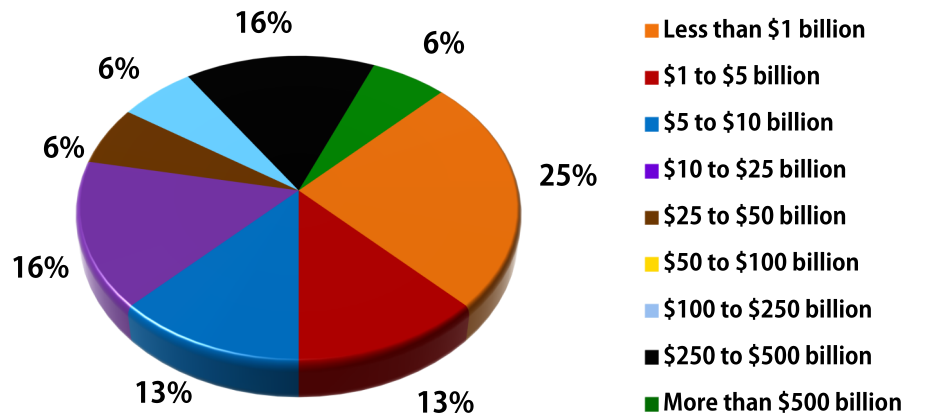


After the card associations, it is payment providers who are the next-most likely organization to offer or support any Consumer Authentication services.

Payment providers, such as gateways, acquirers or processors, and PSPs, made up 17 percent of the 2017 survey, with roughly half processing more and half processing less than \$10 billion in annual volume. Compared to fraud and eCommerce vendors, the payment providers surveyed were significantly less likely to support services for mobile apps (56 versus 78 percent) or mobile web commerce (47 versus 70 percent).

Card issuers and card associations collectively represented 13 percent of the survey. Over 40 percent of issuers surveyed have less than 1 million card issued, 36 percent process under \$1 billion across their portfolio while 27 percent have annual volumes of \$25 million or more. Two-thirds of card issuers and 100 percent of card associations surveyed offer or support Consumer Authentication services, while 63 percent of these issuers and all of these card associations say they actively sell and position Consumer Authentication today.

Payment Providers by Annual Processing Volume



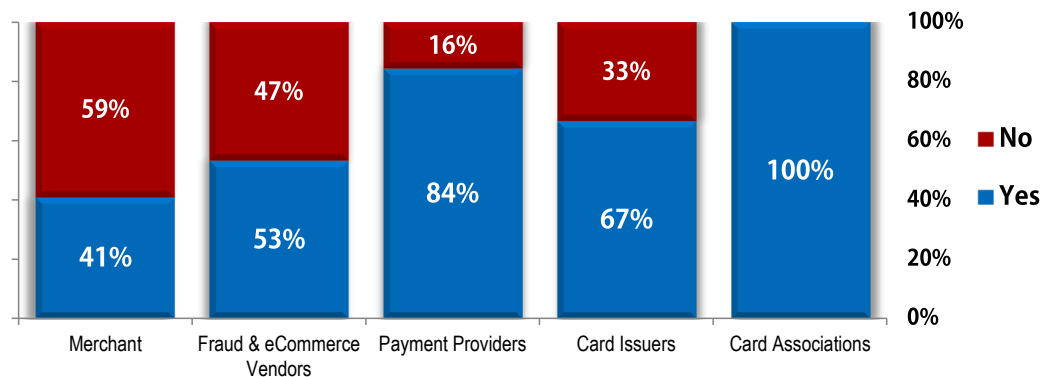
Who uses Consumer Authentication programs, and how?

More than half of all organizations surveyed, 54 percent, currently use or support Consumer Authentication programs such as Verified by Visa, MasterCard SecureCode, American Express SafeKey, Discover and Diners Club ProtectBuy, or JCB J-Secure today.

Merchants with annual revenues less than \$10 million are the least likely group to be using Consumer Authentication or using Selective Presentment, and are less likely to be doing business in regions other than North America.

In each of the first three years of the Consumer Authentication Survey, the share of organizations that use or support these authentication programs has been near but just under 50 percent. While the share of merchants surveyed using Consumer Authentication stayed flat compared to last year at 41 percent, the share of fraud and eCommerce vendors who offer or support Consumer Authentication increased 8 percent, and for payment providers this increased 11 percent. For the first time, more payment providers than card issuers surveyed offer or support Consumer Authentication; all card associations surveyed support these programs as well.

Use of Consumer Authentication by Type of Organization

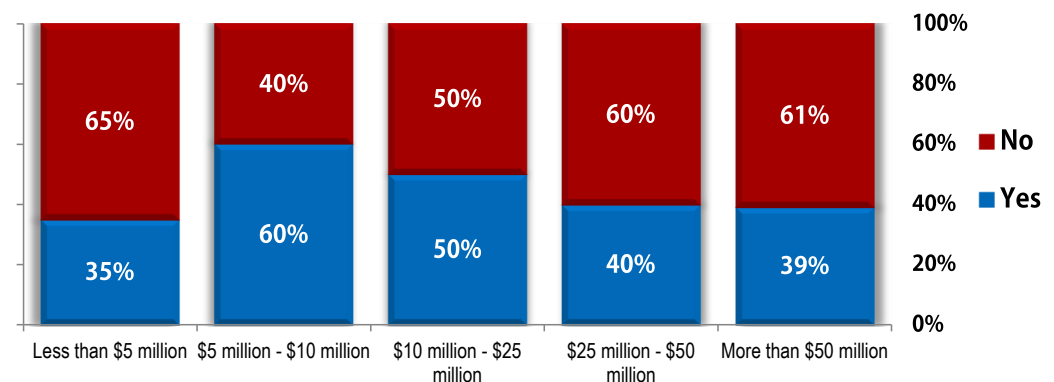


Each year of the survey, higher revenue merchants have been more likely to be using Consumer Authentication and more likely to be using Selective Presentment relative to all other merchants. Enterprise merchants are also considering the most factors or signals, on average, to decide when to present authentication.

Merchants

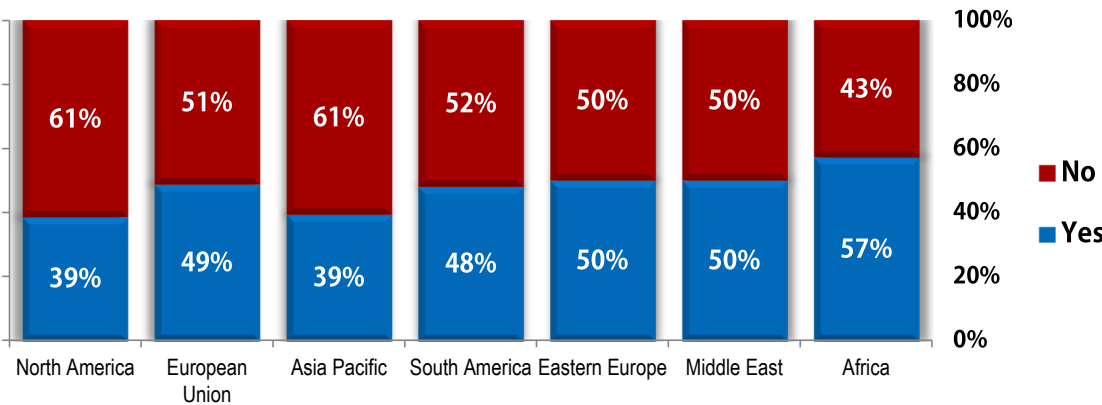
Controlling for merchants that do not operate in the online or mobile channel, 41 percent use Consumer Authentication today, with 88 percent using multiple forms of authentication and nearly 3 forms of authentication on average. A merchant's annual revenue, the types of goods or services they sell online and the regions where they do business are all factors that influence how likely that merchant is to be using Consumer Authentication today. Merchants with gross revenues less than \$5 million annually are the least likely to use Consumer Authentication at 35 percent.

Merchant Use of Consumer Authentication by Revenue



Although 41 percent of all merchants surveyed overall are using Consumer Authentication programs today, this includes only 39 percent of merchants doing business in North America, and for merchants that are only doing business in North America this drops to 36 percent. In each year of the Consumer Authentication Survey, North America has been the region where merchants are least likely to be using Consumer Authentication, although this year merchants doing business in the Asia-Pacific region were equally as likely to use these programs. Merchants doing business in North America and abroad are more likely to be using Consumer Authentication than those operating in North America alone.

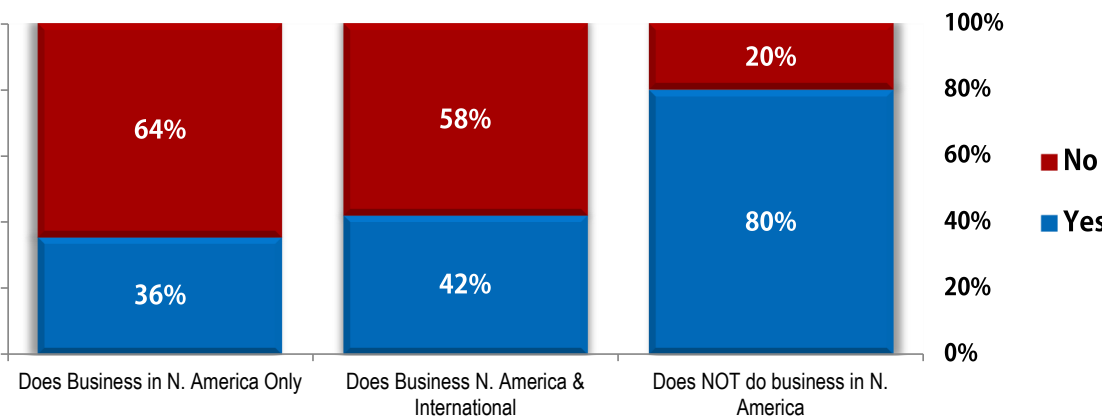
Merchant Use of Consumer Authentication by Region



Although merchants who are only doing business in North America today are more likely to be using Consumer Authentication when compared to previous surveys, the share of merchants not doing business in North America using Consumer Authentication grew even more, widening the already significant gap between these two groups.

Comparing merchants that only do business in North America to merchants who do business in one or more regions but not North America, the regional disparity in use of Consumer Authentication becomes apparent. Merchants in the latter group are more than twice as likely to be using Consumer Authentication at 80 percent. While this is a wide gap, the use of Consumer Authentication is actually growing with merchants in both groups. Last year just 29 percent of merchants doing business only in North America used Consumer Authentication, which increased to 36 percent in 2017. Merchants who do not do businesses in North America grew even more likely to be using Consumer Authentication today (from 58 to 80 percent). Even as use of Consumer Authentication increased amongst merchants in North America, the gap in use of these programs between North America and all other regions widened.

Merchant Use of Consumer Authentication: North America vs. International



Merchants Using Consumer Authentication		
Types of Goods/Services Sold Online	Yes	No
Dating / Social Sites	100%	0%
Office Supplies	100%	0%
Gaming	67%	33%
Transportation Services	67%	33%
Travel	63%	37%
Auto Parts & Accessories	50%	50%
Gold, Silver and Precious Metals	50%	50%
Health / Beauty	50%	50%
Jewelry	50%	50%
Wholesale / Commercial	50%	50%
Gift Cards (Physical)	45%	55%
Gift Cards (Digital)	42%	58%
Apparel / Accessories	40%	60%
Computers / Electronics	38%	62%
Sporting Goods	38%	62%
Toys / Hobbies	38%	62%
Books / Music / Video	33%	67%
Digital Goods	28%	72%
Food / Drug	25%	75%
Mass Merchant	25%	75%
Services	25%	75%
Telecom	25%	75%
Event Ticketing	25%	75%
Housewares / Home Furnishings	18%	82%
Hardware / Home Improvement	17%	83%
Specialty Non-Apparel	14%	86%

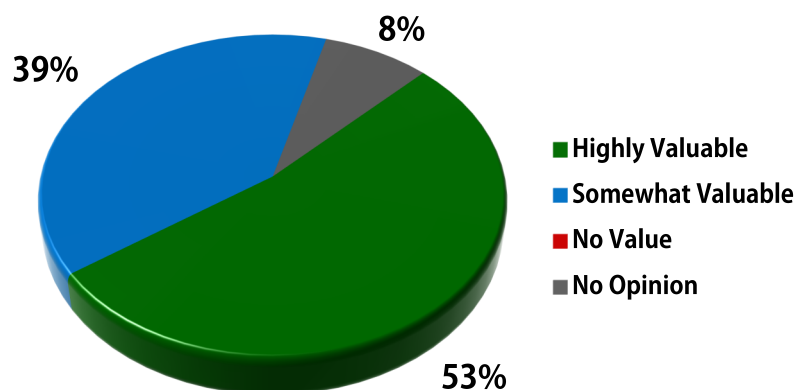
There also tends to be more use of Consumer Authentication in higher risk industries such as gaming (67 percent), travel (63 percent), gold/precious metals (50 percent), jewelry (50 percent) and others. There are 10 industries where at least half of merchants surveyed use Consumer Authentication, up from seven industries last year. The office supplies and dating/social site industries each represented just 3 percent of merchant surveyed, so the 100 percent use of Consumer Authentication is likely overstated. Several industries, however, including gaming, travel and jewelry, each represented 10 to 15 percent of merchants surveyed, and the strong use of Consumer Authentication is likely to be an accurate representation.

There are 17 industries where at least one-third of merchants are using Consumer Authentication services, including apparel/accessories, a group more than 20 percent of merchants surveyed operate in, and sporting goods, an industry in which 15 percent of merchants surveyed compete.

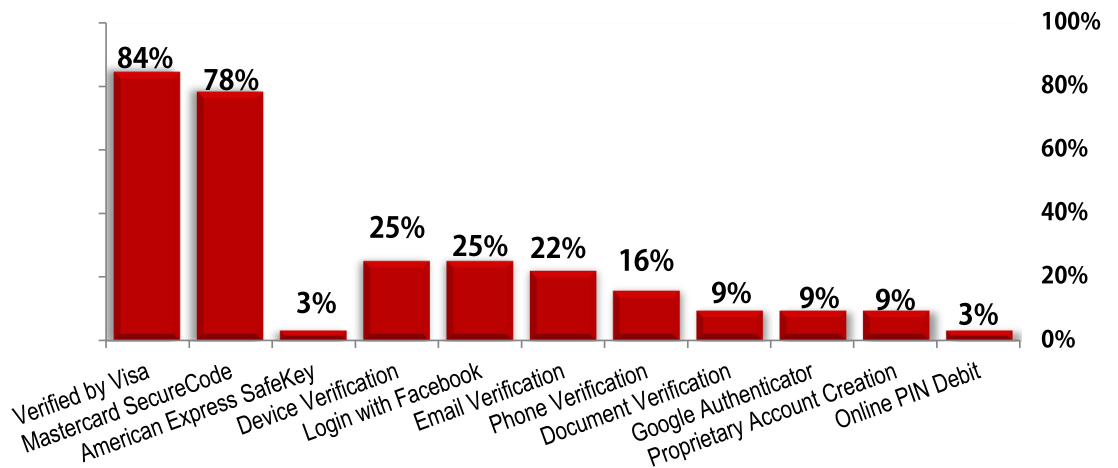
Merchants using Consumer Authentication were additionally asked how valuable they think these programs, such as Verified by Visa and others, really are. More than half of merchants using these programs today, 53 percent, said that Consumer Authentication is “Highly Valuable,” with an additional 39 percent saying they are “Somewhat Valuable.”

Merchants using Consumer Authentication today are utilizing 2.84 forms of authentication on average, including 31 percent of merchants that use four or more, 56 percent that use three or more, and 88 percent that use at least two methods of authentication. In each of the four years of the Consumer Authentication Survey, Verified by Visa followed by MasterCard SecureCode have been the most used forms of authentication by merchants. Perhaps related to the increase in merchants surveyed who only do business in North America and decline in merchants that do business across all other regions, there was a significant decline in merchants surveyed who use American Express SafeKey (from 23 to 3 percent), while no merchants surveyed this year said they use Discover or Diner's Club ProtectBuy (down from 5 percent last year), or JCB J-Secure (down from 3 percent in 2016).

How Valuable is Consumer Authentication? (Merchants)



Forms of Consumer Authentication Merchants Are Using Today

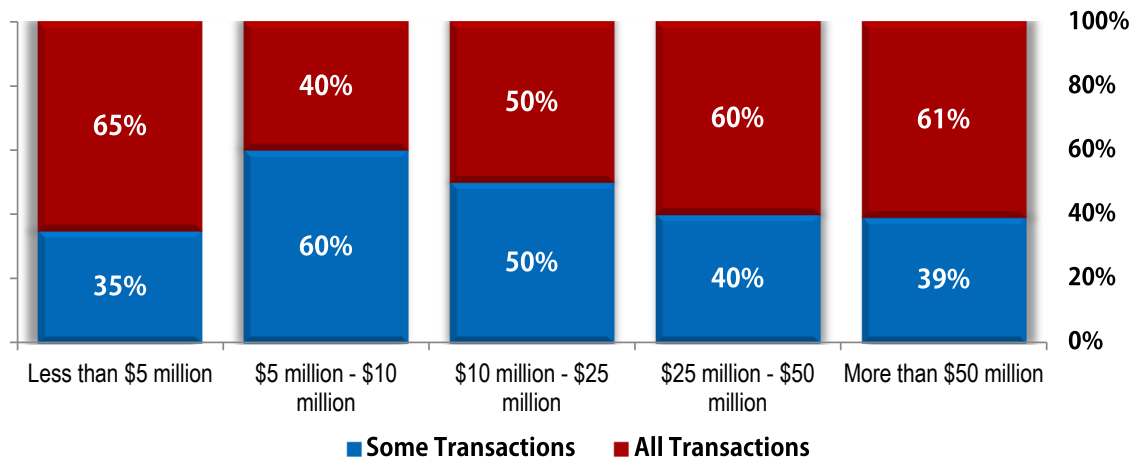


All merchants who implemented Consumer Authentication in the last two years are using Selective Presentment, compared to just 44 percent of merchants who have used Consumer Authentication for five or more years.

Beyond measuring use of Consumer Authentication programs this annual survey also looks at the use of Selective Presentment, or only presenting authentication on transactions which meet certain criteria or warrant it, as opposed to requiring authentication on every transaction. Just 53 percent of merchants surveyed who were using Consumer Authentication in the 2017 survey were also using Selective Presentment, the lowest total in all four years of study. Data shows that the increase in SMB (under \$10 million in annual revenue) merchants in this year's survey contributed to the decline in use of Selective Presentment overall.

Selective Presentment is more common amongst larger revenue merchants; this has been a recurring trend over the past three years of the Consumer Authentication Survey. Today 63 percent of merchants earning more than \$50 million per year in revenue, and 58 percent earning more than \$10M in annual revenue, use Selective Presentment. This is compared to just 44 percent of merchants earning less than \$10M in annual revenue and 43 percent of those earning less than \$5M annually. An interesting recurring trend across that past three years of the Consumer Authentication Survey is that merchants who have implemented Consumer Authentication most recently are the most likely to be using Selective Presentment, and the holds true more so than ever this year.

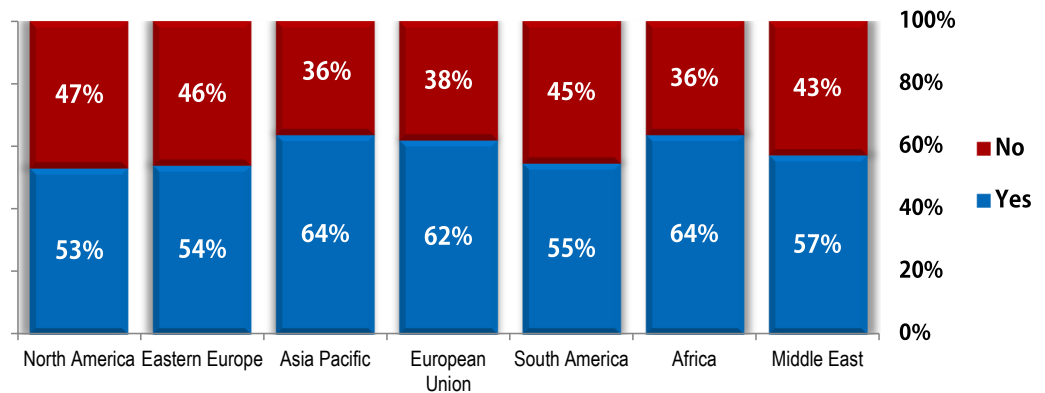
Merchant Use of Selective Presentment by Revenue



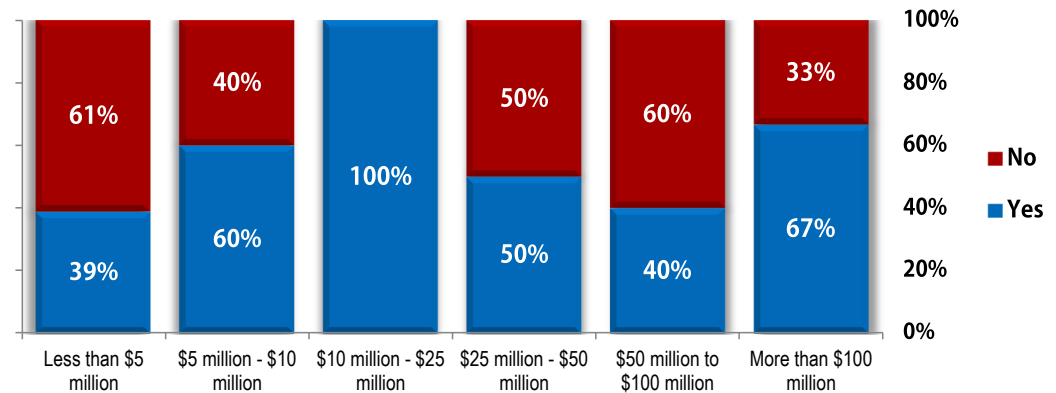
Fraud & eCommerce Vendors

Behind merchants, fraud and eCommerce vendors are the second-most represented type of organization in the 2017 Consumer Authentication Survey, and the second-least likely to use or support Consumer Authentication today, at 53 percent ahead only of merchants. There is less regional disparity in support of Consumer Authentication amongst fraud and eCommerce vendors as at least 53 percent of these providers offer or support these programs in each region and no more than 64 percent of these vendors offer these services in any one region. There is a significant disparity, however, between SMB fraud and eCommerce vendors and higher revenue organizations. Just 39 percent of fraud eCommerce vendors with annual revenue less than \$5 million offer or support Consumer Authentication, compared to 62 percent of these vendors with annual revenue greater than \$5 million and 67 percent with revenue over \$100 million.

Fraud & eCommerce Vendors that Support Consumer Authentication by Region



Fraud & eCommerce Vendors that Support Consumer Authentication by Revenue



The share of fraud & eCommerce vendors who are actively selling Consumer Authentication services grew from 55 to 70 percent in 2016, and increased further to 73 percent this year.

Payment Providers, Card Associations & Issuers

The share of payment providers surveyed who offer or support Consumer Authentication increased to 84 percent in the 2017 survey, including 100 percent of these providers in every region except North (81 percent) and South America (89 percent). Payment providers are behind the card associations as the type of organization most likely to offer or support Consumer Authentication, but did pull ahead of card issuers who were more likely to use or support these programs in each of the past Consumer Authentication Surveys.

Market Perspectives on Consumer Authentication

In what is now the 4th consecutive year of the Consumer Authentication Survey, CardinalCommerce and The Fraud Practice have considered various factors for understanding merchant, service provider and other perspectives around the use of Consumer Authentication. This includes:

Half of merchants who do not use Consumer Authentication today are unaware of the ability to use Selective Presentment, but those who use Selective Presentment are more than twice as likely to report Consumer Authentication made a positive impact on user experience.

- ⇒ **Market Education and Awareness Factors** – How knowledgeable is the market regarding incentives and regional mandates around Consumer Authentication?
- ⇒ **Vendor Interest Factors** – How active are payment and fraud vendors with selling or promoting Consumer Authentication services?
- ⇒ **Mind Share Factors** – Do organizations in the CNP payments ecosystem see Consumer Authentication as a long-term best practice?
- ⇒ **FUD Factors** – How much Fear, Uncertainty and Doubt (FUD) is there around Consumer Authentication in the market? What are the primary reasons why organizations do not use or support these programs today and are these concerns are valid?
- ⇒ **Adoption Factors** – For organizations not using Consumer Authentication today, how likely are they to implement these programs in the near future? Will the evolution of 3DS 2.0 provide incentive for more organizations to use or support Consumer Authentication, and which improvements or benefits are deemed most important?
- ⇒ **Happiness Factors** – What is the overall level of satisfaction with Consumer Authentication, and what are the most valued benefits?

"It is exciting to see the merchant community embracing Consumer Authentication as it continues to enable fast, safe and secure digital commerce. Currently, the industry is working together to launch the 3-D Secure 2.0 standard, which will greatly expand the scope and quality of real-time predictive risk scoring for merchants and issuers, provide more seamless online payment experiences for consumers, and accommodate new devices and ways to pay. User-friendly authentication experiences can also translate into higher conversion rates and increased sales for merchants, while helping issuers to assess risk and make more informed transaction decisions in an increasingly digital world."

— Mark Nelsen
Senior Vice President Risk and Authentication Products, Visa

Market Education & Awareness Factors

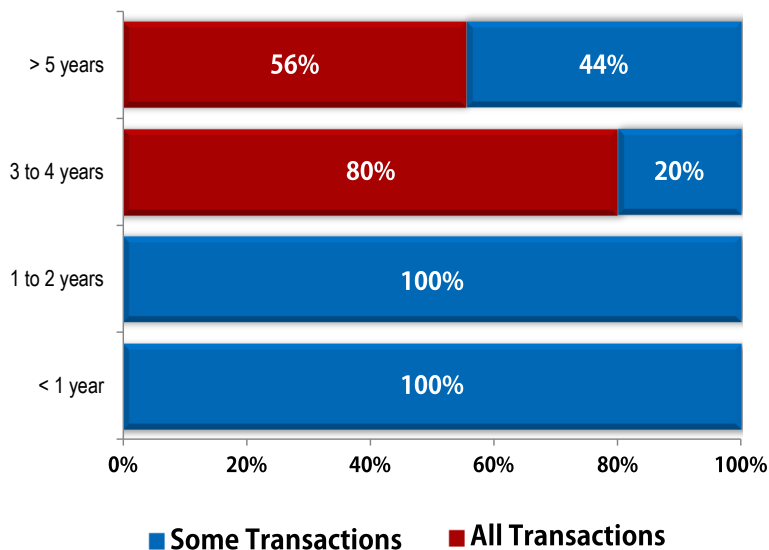
Knowledge and awareness factors are assessed on two levels: how sophisticated organizations are in their implementation and decisions on when to present authentication, and how educated or aware organizations not using Consumer Authentication are about the features and benefits of using these programs.

Assessing the level of market knowledge and sophistication with Consumer Authentication based on how merchants are using these services today considers how many merchants are using Selective Presentment, and how many factors or signals they are considering to decide when authentication should be required. The share of merchants using Selective Presentment is down to 53 percent in the 2017 survey, and the largest merchants (> \$50 million in annual revenue) are the most likely to be presenting Consumer Authentication selectively. However, merchants surveyed that are using Selective Presentment today are considering more factors and are more sophisticated with implementation and authentication decisions overall. This is explored further in the later section: [Deciding When to Present Authentication](#).

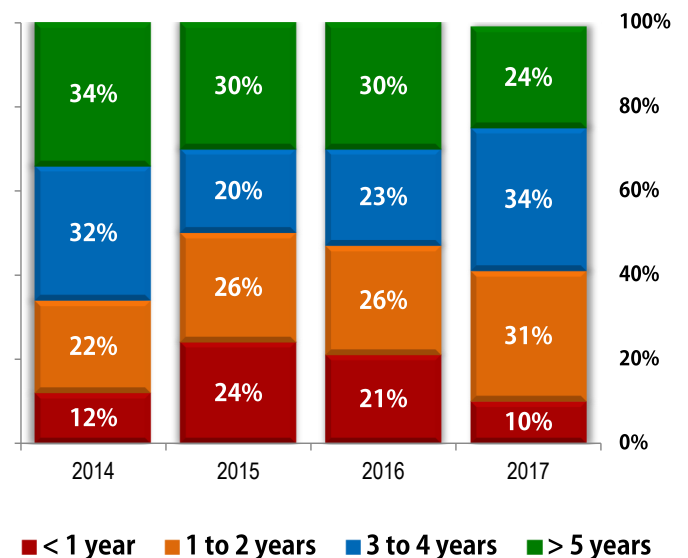
When merchants use Selective Presentment they consider 3.2 factors or signals, on average, to decide when authentication will be presented, with 94 percent considering multiple signals.

Continuing Trends: A recurring theme from the past three surveys is that merchants who have implemented Consumer Authentication more recently are also the most likely to be using Selective Presentment, and this becomes more true each year. All merchants in the 2017 survey who have implemented Consumer Authentication in the last two years are using Selective Presentment. In each of the last three years of the survey, merchants who had implemented Consumer Authentication within the past 12 months were the group most likely to be using Selective Presentment, including 82 percent of these merchants in 2016 and 75 percent in 2015.

Merchant Use of Selective Presentment by Years Experience with Consumer Authentication



Merchants by Length of Time Using Consumer Authentication

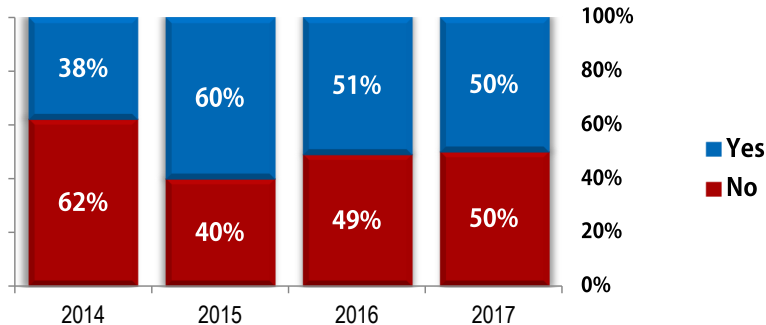


Knowledge and awareness factors around Consumer Authentication across organizations that do not use, offer or support these services today are comparable to last year's survey. Merchants not using Consumer Authentication are just as likely to be aware of Selective Presentment at about 50 percent, while merchants are slightly more likely to be aware of interchange reduction benefits. Those aware of regional mandates, however, fell from 53 to 40 percent of merchants not using Consumer Authentication between the 2016 and 2017 surveys, which is related to the increasing share of merchants surveyed only doing business in North America (where there are no such mandates).

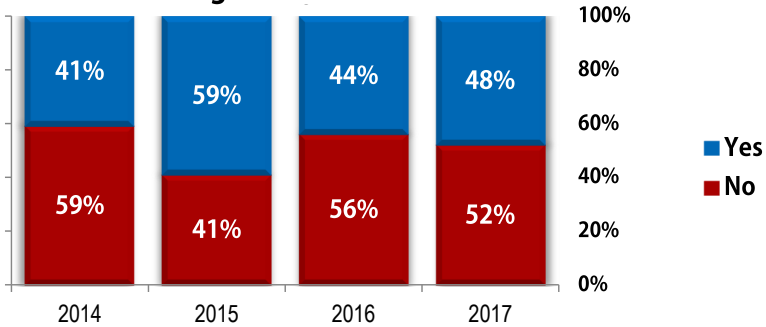
Over the four years of the Consumer Authentication Survey, there have been fluctuations in education and awareness around these programs across merchants that are not using them. Although awareness of Selective Presentment and interchange reduction benefits are relatively flat compared to last year, there was a notable decline from 2015 to 2016 in awareness of each of these benefits. This occurred after a significant increase in education awareness factors between the 2014 and 2015 surveys. It is likely that after more merchants were aware of these benefits, more began implementing Consumer Authentication, as evidenced by high share of merchants who have implemented Consumer Authentication in the last two years and the very high use of Selective Presentment amongst these merchants.

Merchants Not Using Consumer Authentication who are Aware of:

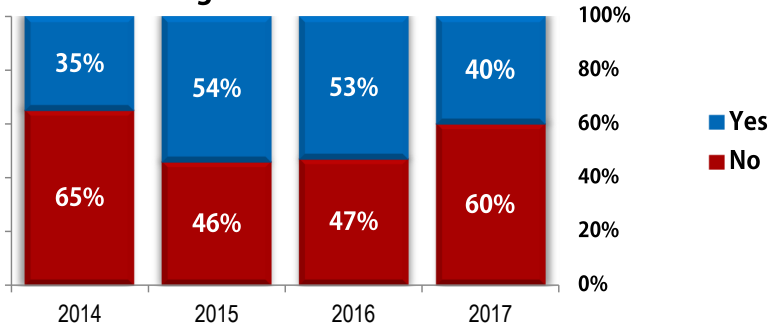
Selective Presentment



Interchange Reduction Benefits



Regional Mandates



Awareness of regional mandates, interchange reduction benefits and Selective Presentment amongst merchants not using Consumer Authentication all grew significantly after the inaugural survey but have remained lower since. Over this time there has also been an increase in those who have implemented Consumer Authentication in the last two years, and these merchants are the ones most likely to be using Selective Presentment.

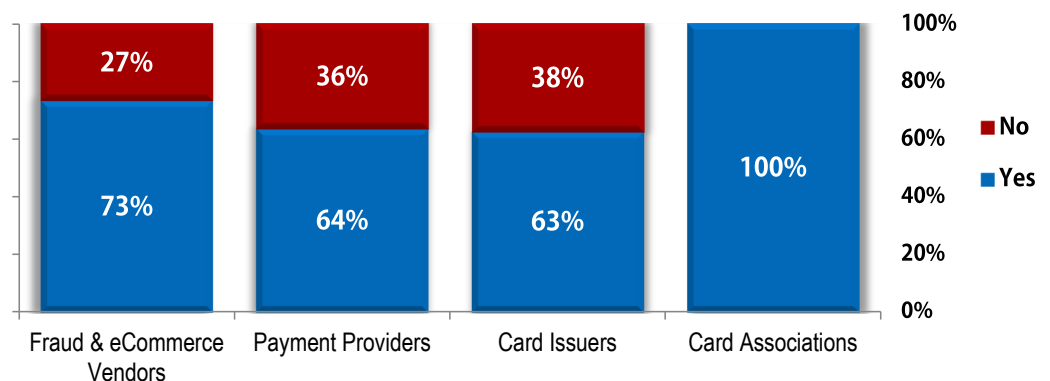
Vendor Interest Factors

After falling to below 50 percent in last year's Consumer Authentication Survey, the share of fraud and eCommerce vendors that offer or support Consumer Authentication programs increased to 53 percent in 2017, although this is still down from two years ago. Support for Consumer Authentication across other non-merchant organizations has been high in all four years of the Consumer Authentication Survey, especially with payment providers (84 percent in 2017) and card associations (100 percent in 2017) each year.

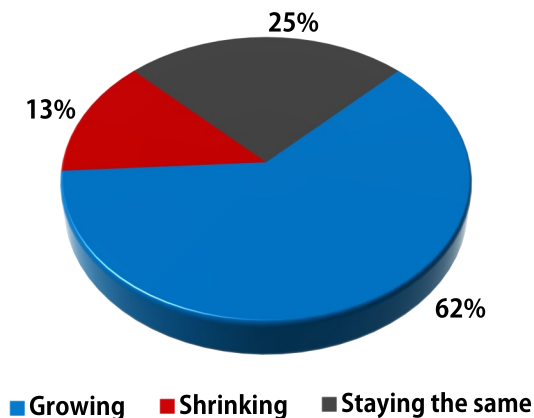
About nine out of every ten card associations and three-quarters of fraud and eCommerce vendors say that demand for Consumer Authentication is growing, while 73 percent of these vendors and 100 percent of card associations actively sell or position Consumer Authentication services today.

The share of fraud and eCommerce vendors that offer or support Consumer Authentication is up from last year, but the share of these vendors that actively sell or position Consumer Authentication services has increased two years in a row, from 55 to 70 percent in 2016 and rising again to 73 percent this year. More than 63 percent payment providers and card issuers actively sell or position Consumer Authentication services, up from 50 percent each last year. The card associations, however, are the creators and biggest advocates of Consumer Authentication programs. Not only do all card association survey respondents support Consumer Authentication today, all actively sell and position these programs.

Do you Actively Sell or Position Consumer Authentication?



Demand for Consumer Authentication



Organizations are more likely to actively position Consumer Authentication services, and this may be in response to merchant demand for these services, which is growing as well. The share of non-merchant organizations who said that demand for Consumer Authentication services is growing increased from 53 to 62 percent since last year, while those reporting a reduction in demand fell slightly from 15 to 13 percent. Card associations were the type of organization most likely to say demand for these programs is increasing at 88 percent, implying more demand and enrollment of cardholders in Verified by Visa, Mastercard SecureCode and other Consumer Authentication programs. Fraud and eCommerce vendors are the next most likely to cite growth in demand for Consumer Authentication, up from 60 to 73 percent this year, implying more merchants are inquiring about adding these services to their payment and risk management strategies.

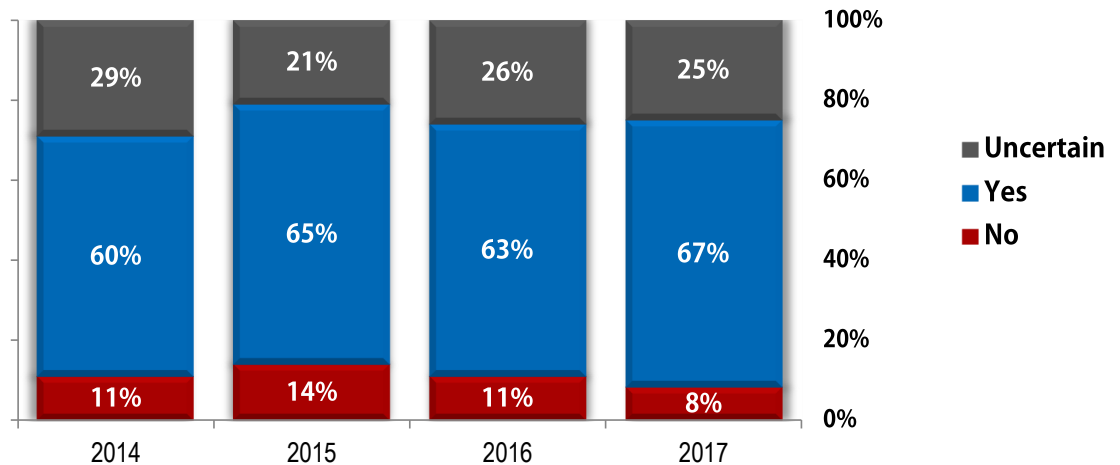
Mind Share Factors

Nearly 52 percent of merchants using Consumer Authentication consider these services highly valuable.

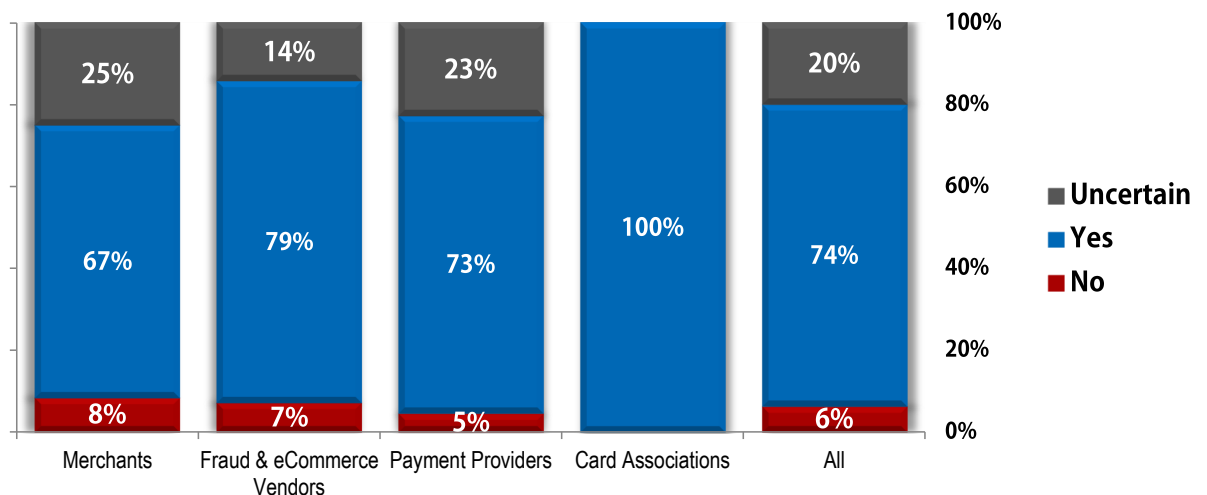
There are several trends or findings that transcend all four years of the Consumer Authentication Survey, one of which being that a majority of organizations, whether they use these services or not, believe that Consumer Authentication programs like Verified by Visa and MasterCard SecureCode are valuable programs that will continue to be needed and have a future with electronic commerce. In each year of the survey, at least 60 percent of merchants have said “Yes,” that Consumer Authentication programs will stay around, while this increased to two-thirds of merchants and the highest total yet in the 2017 Consumer Authentication Survey. Just 8 percent of merchants said these programs do not have a future, the lowest share in any year of the survey.

Despite the fact that 60 percent of merchants surveyed were not using Consumer Authentication, two-thirds of all merchants believe these programs are here to stay. Merchants, however, are still the type of organization least likely to state this. Nearly three-quarters of all organizations surveyed said Consumer Authentication has a future, including all card associations and nearly 80 percent of fraud and eCommerce vendors. Every type of organization was more likely to say “Yes,” that Consumer Authentication is here to stay compared to the 2016 survey, except for card associations who remained at 100 percent.

Does Consumer Authentication Have a Future (All Respondents)



Is Consumer Authentication Here to Stay?



FUD Factors

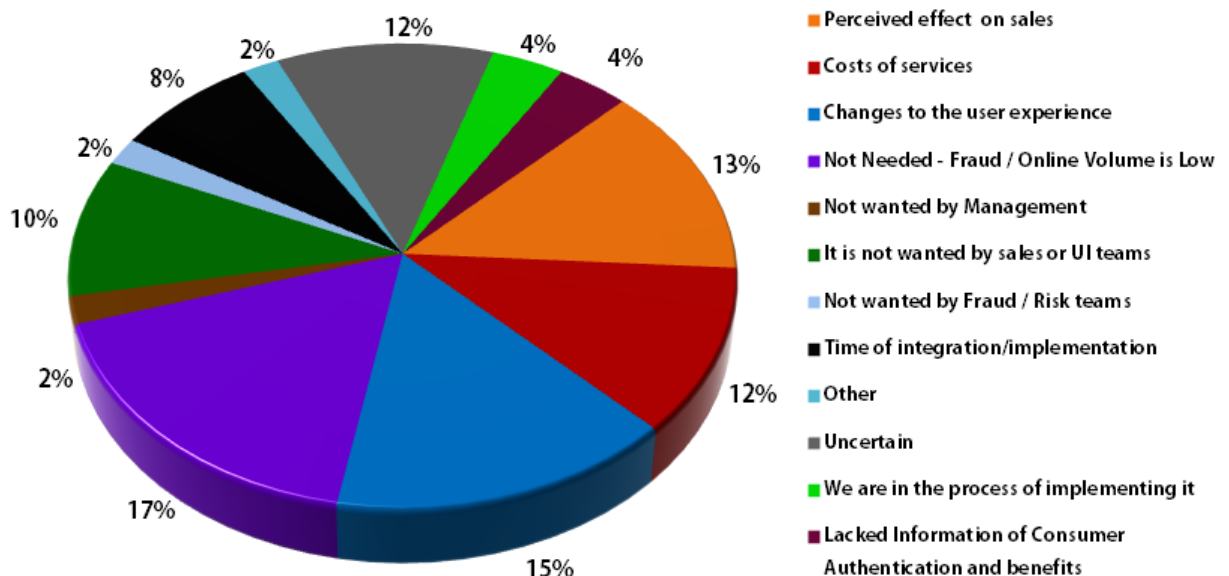
Depending on how Consumer Authentication is implemented, it can add an additional step for authentication from a small percentage to all of a merchant's online transactions. Lower cardholder adoption of these programs in the U.S. relative to many other countries and regions, as well as spotty knowledge and awareness of implementation strategies and program benefits across merchants not using these services today, are factors that contribute to **Fear, Uncertainty** and **Doubt** around the use of Consumer Authentication programs. This **FUD** can be a deterrent for organizations that are less familiar with Selective Presentment, risk-based authentication and other techniques to benefit from the fraud liability shift without disrupting the checkout flow or impacting the user experience.

While 15 percent of merchants who currently don't use Consumer Authentication say this is because of the perceived impact on the user experience, only half of these are aware they can selectively choose when to present or require authentication.

Since the inaugural Consumer Authentication Survey, one of the primary goals of this annual study was to identify pain points and sources of FUD in the market, then compare this to what merchants using Consumer Authentication report firsthand. Compared to all other years of the study there have been some changes in the primary reasons why organizations not using Consumer Authentication haven't yet done so, and there are other signs that overall FUD factors may be decreasing.

In the first three years of the Consumer Authentication Survey merchants were most likely to cite the perceived effect on sales as the primary reason why they have not implemented Consumer Authentication, while the share of merchants stating this declined from 20 percent in the inaugural survey to 17 percent last year. In this year's survey, the primary reason merchants have not implemented Consumer Authentication is because it is not needed due to online volume or online fraud attempts being low. The perceived impact on sales was the third most common reason for merchants not using Consumer Authentication this year at 13 percent, also behind the 15 percent of merchants who are most concerned about changes to the user experience. Keep in mind that only half of merchants surveyed who were not using Consumer Authentication were aware of the ability to use Selective Presentment. The share of merchants not using Consumer Authentication today who say it is because of the cost of services remained unchanged from last year at 12 percent, while another 12 percent are uncertain why they don't use these services.

Why is Consumer Authentication Not Used Today? (Merchants)

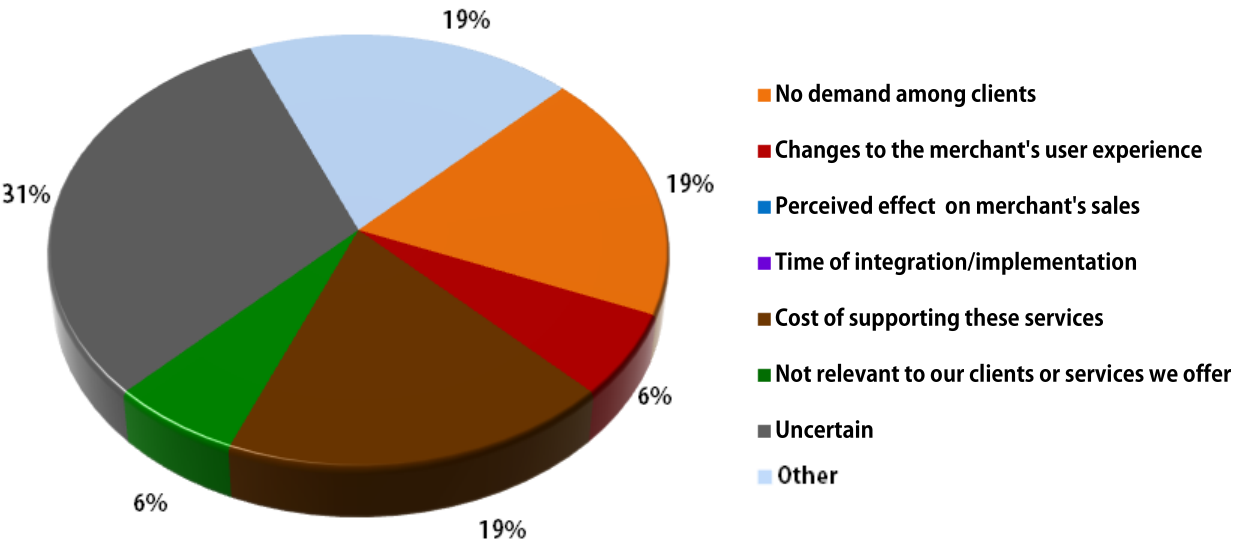


Continuing Trends: Another finding that has continued across all four years of the Consumer Authentication Survey is that only a small percentage of merchants who are not using Consumer Authentication have done so in the past, and this continues to decline. Just 8 percent of merchants surveyed this year who are not using Consumer Authentication have used these services in the past, compared to 13 percent last year and 18 percent in each of the first two years of the study.

Three-out-of-four merchants who use Consumer Authentication say it has a neutral or positive impact on user experience while just 6 percent of fraud and eCommerce vendors cite perceived changes to the merchant’s user experience as the primary reason why they do not offer or support Consumer Authentication today.

Although fraud and eCommerce vendors, payment providers and other non-merchant organizations are more likely to support Consumer Authentication than merchants, it is also important to consider the ones who do not offer or support these services and understand why. As more of these vendors and service providers overall are reporting an increase in demand for Consumer Authentication services, not offering or supporting these programs is becoming more difficult to justify. When asked the primary reason why they do not offer or support Consumer Authentication today, the most common reason stated by fraud and eCommerce vendors was that they don’t know why, as 31 percent were uncertain. Although 73 percent of all fraud and eCommerce vendors say demand for these services is growing, 19 percent of those who do not currently offer or support Consumer Authentication say lack of demand among their client base is the primary reason they do not offer these services. Costs of implementing and being able to offer or support Consumer Authentication is equally as likely to be cited as the primary reason fraud and eCommerce vendors do not offer these services today, at 19 percent as well.

Why is Consumer Authentication Not Used Today? (Fraud & eCommerce Providers)



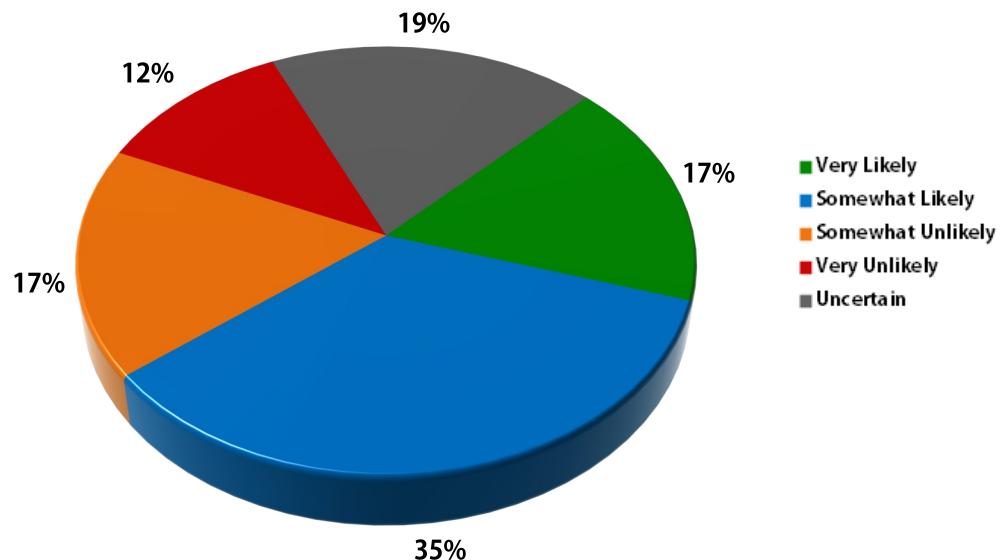
Adoption Factors

Over three-quarters of fraud and eCommerce vendors who do not support Consumer Authentication today say it is likely they will offer or support these programs in the future, including 44 percent who say this is very likely.

Adoption factors look at organizations not using Consumer Authentication today and assesses how likely they are or how many expect to be implementing or using these programs in the near future. With the evolution of the 3DS 2.0 protocol and new specifications, the 2017 Consumer Authentication Survey included a new set of questions asking all respondents to rank the new features and benefits that will be rolling out later this year, and whether these new features influence the likelihood of adoption.

This starts with considering the share of merchants who may be implementing Consumer Authentication soon or in the next twelve months. The share of merchants not using Consumer Authentication today who say they are “Very Likely,” to implement it in 2017 increased from 14 to 17 percent since last year. Merchants who are least “Somewhat Likely,” to adopt Consumer Authentication in 2017 increased from 44 to 52 percent in the past year. Meanwhile, the share of merchants who are “Very Unlikely,” to implement Consumer Authentication in the next year fell from 19 to 12 percent and those who are uncertain remained unchanged.

Likelihood of Implementing Consumer Authentication in 2018 (Merchants)



“As consumers continue to adopt a more digital lifestyle, they desire a safe and simple shopping experience at all times. We are working with issuers and merchants to create just that. The use of new Consumer Authentication technology like 3DS 2.0 and biometrics strike the right balance. Consumer Authentication should be a key pillar of your security strategy to help reduce fraud and lift transaction approval rates.”

— **Bob Reany**
Executive Vice President, Identity Solutions
Mastercard

Adoption Factors and 3DS 2.0

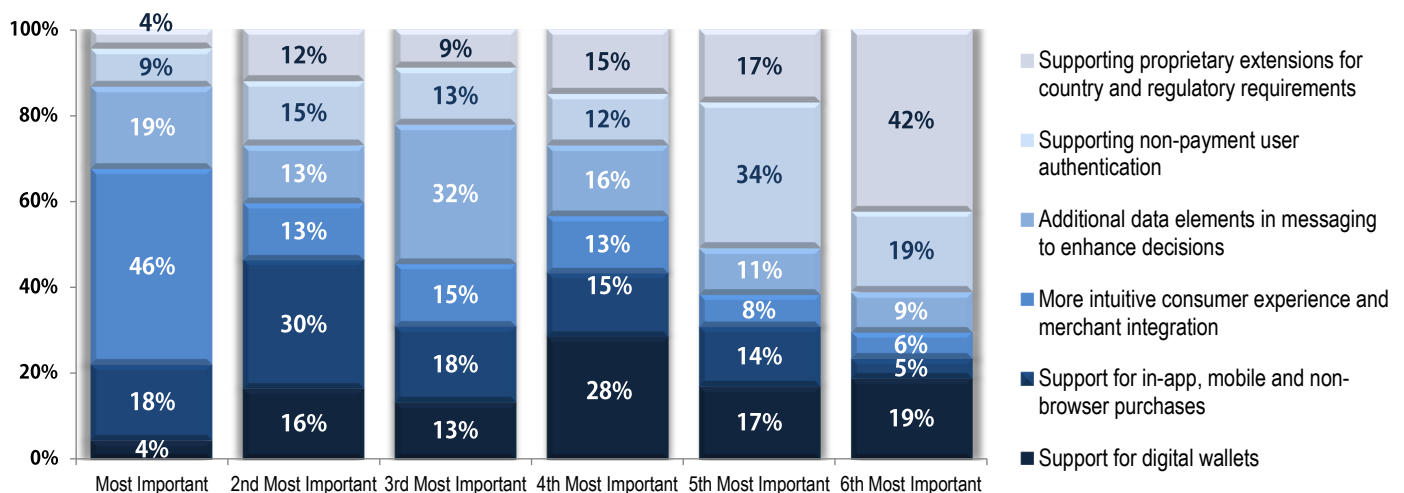
Updates to the 2017 Consumer Authentication Survey included additional questions focused on the proposed changes regarding the 3-D Secure (3DS) 2.0 specification and protocol. The 4th Annual Consumer Authentication Survey first asked all respondents to rank six new features in the updated 3DS 2.0 Specification from most to least important, then gaged whether these developments influence the likelihood of adopting Consumer Authentication amongst those not using it today.

New features of the 3DS 2.0 Specification are for it to better support evolving authentication requirements in the mobile and CNP channel. More specifically, this includes:

- ⇒ Support for authentication within mobile and digital wallets
- ⇒ Support for authentication with non-browser and mobile app purchase environments
- ⇒ Support for better integration with merchants and a more intuitive/seamless Consumer Authentication experience
- ⇒ Support for additional data elements within messaging to enhance signals and ability for making authentication or presentment decisions
- ⇒ Support for non-payment user authentication
- ⇒ Support for proprietary extensions related to regulatory and country-specific requirements

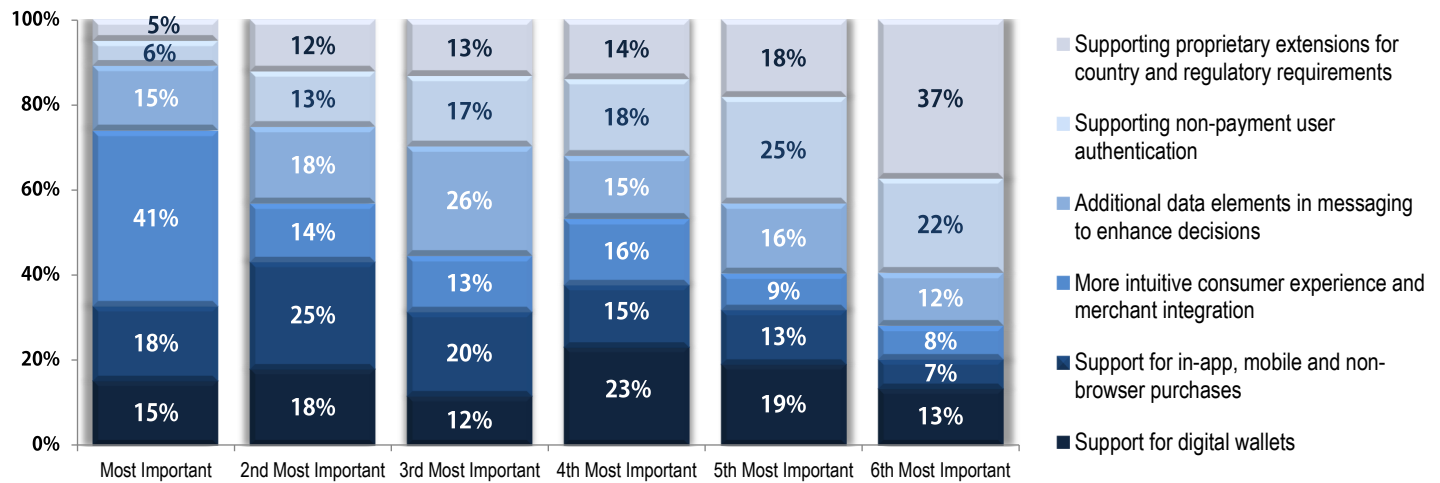
The new features or qualities deemed most important with 3DS 2.0 are very similar across merchants and all survey respondents overall. Organizations are most excited about improved merchant integrations and how this will lead to a more intuitive consumer experience, as 46 percent of merchants and 41 percent of all organizations said this was the most important new feature. Merchants and non-merchant organizations are also most likely to indicate that increased support for authentication with in-app, mobile and non-browser purchases is the second most important new feature with 3DS 2.0. About 30 percent of merchants and 25 percent of all organizations say this is the second most important new feature, while an additional 18 percent of each says that it is actually the most important.

Most Important New Features of 3DS 2.0 (Merchants)



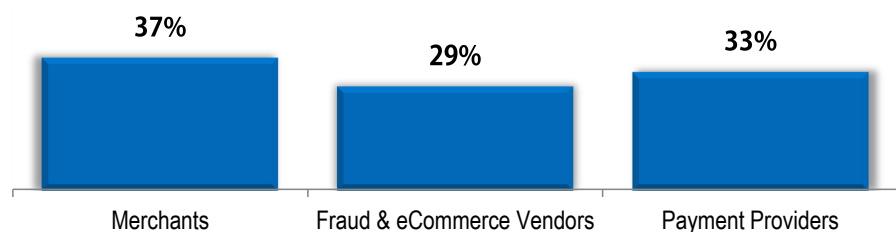
The third through sixth most important new features coming with 3DS 2.0, as indicated by both merchants and all business types overall, are: (3rd) additional data elements supported in messaging to enhance authentication decisions, (4th) support for digital wallets, (5th) support for non-payment user authentication, and (6th) proprietary extensions for country and regulatory requirements. Organizations other than merchants were more likely to consider support for digital wallets the most important new feature of 3DS 2.0 as 15 percent of survey respondents overall ranked it most important, compared to just 4 percent of merchants.

Most Important New Features of 3DS 2.0 (All Respondents)



After all merchants and organizations were informed and asked about the new features and benefits rolled out with the updated 3DS 2.0 Specification in October 2016, those organizations who currently do not use or support Consumer Authentication services were asked if they are now more or less likely to implement, offer or support these programs. Over 37 percent of merchants, 33 percent of payment providers and 29 percent of fraud and eCommerce vendors who do not use or support Consumer Authentication today said they are more likely to adopt these programs after the 3DS 2.0 protocol goes into effect. More than half of merchants, 54 percent, who indicated that it's at least somewhat likely they will implement Consumer Authentication by the end of 2017, said it is even more likely they implement these programs after learning more about the 3-D Secure 2.0 protocol and its features.

Organizations More Likely to Support Consumer Authentication After Learning About 3DS 2.0



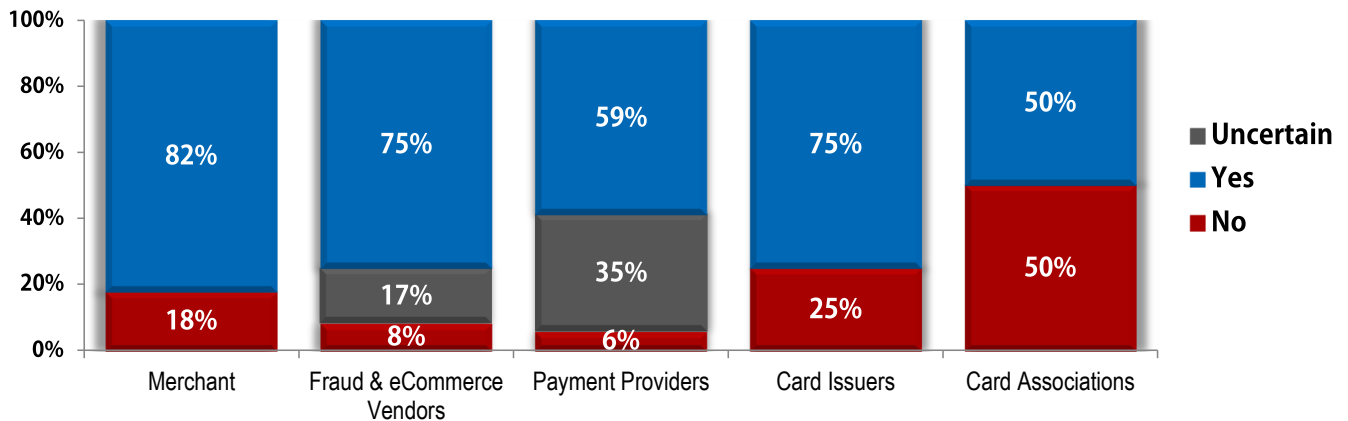
Happiness Factors

Analysis regarding Happiness Factors with the use of Consumer Authentication focuses on merchants and other organizations that use, offer or support these programs today. In addition to overall happiness and satisfaction with these services, this portion of the survey seeks to measure which aspects or benefits of Consumer Authentication organizations find most valuable and how valuable they find these services overall.

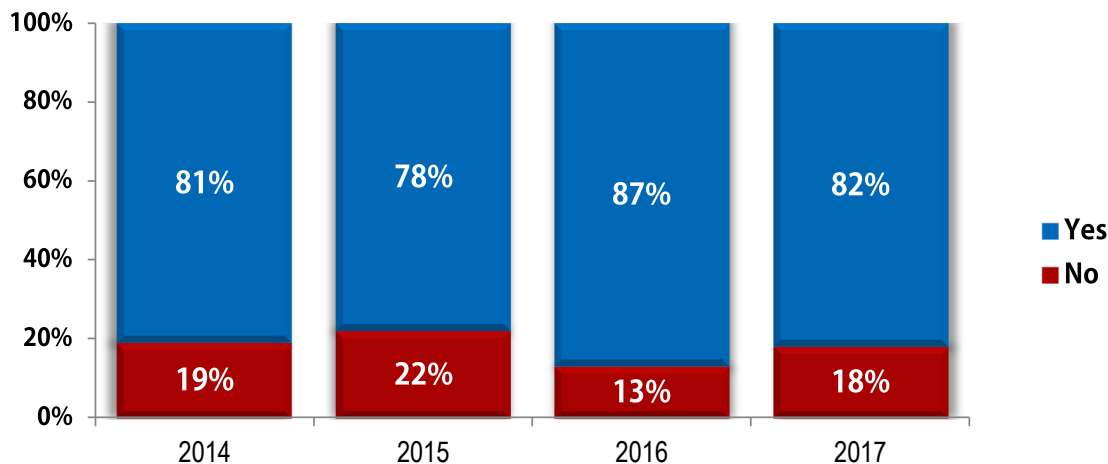
The merchant satisfaction rate with Consumer Authentication is over 80 percent while two-thirds of merchants reported a decline in chargebacks.

The share of merchants using Consumer Authentication who are happy and satisfied with these services overall remains high, currently at 82 percent, while each of the past two years of the survey have measured satisfaction rates over 80 percent. Fraud and eCommerce vendors, payment providers and card issuers that offer or support Consumer Authentication, were all more likely to state they are satisfied with these services compared to last year. Meanwhile 100 percent of card associations and eCommerce and fraud vendors, along with 95 percent of payment providers and 92 percent of merchants, say that Consumer Authentication programs are somewhat or highly valuable (the remaining merchants and payment providers had no opinion, none said they were not valuable).

Organizations that are Satisfied with Consumer Authentication by Type



Merchants that are Satisfied with Consumer Authentication Overall

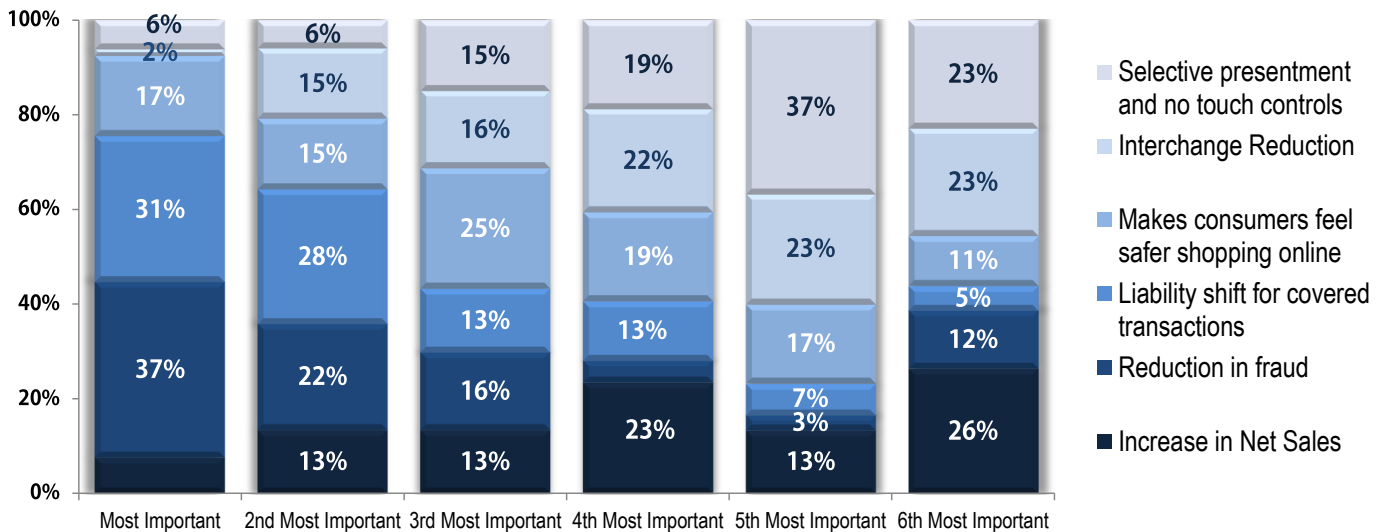


Most Valued Benefits

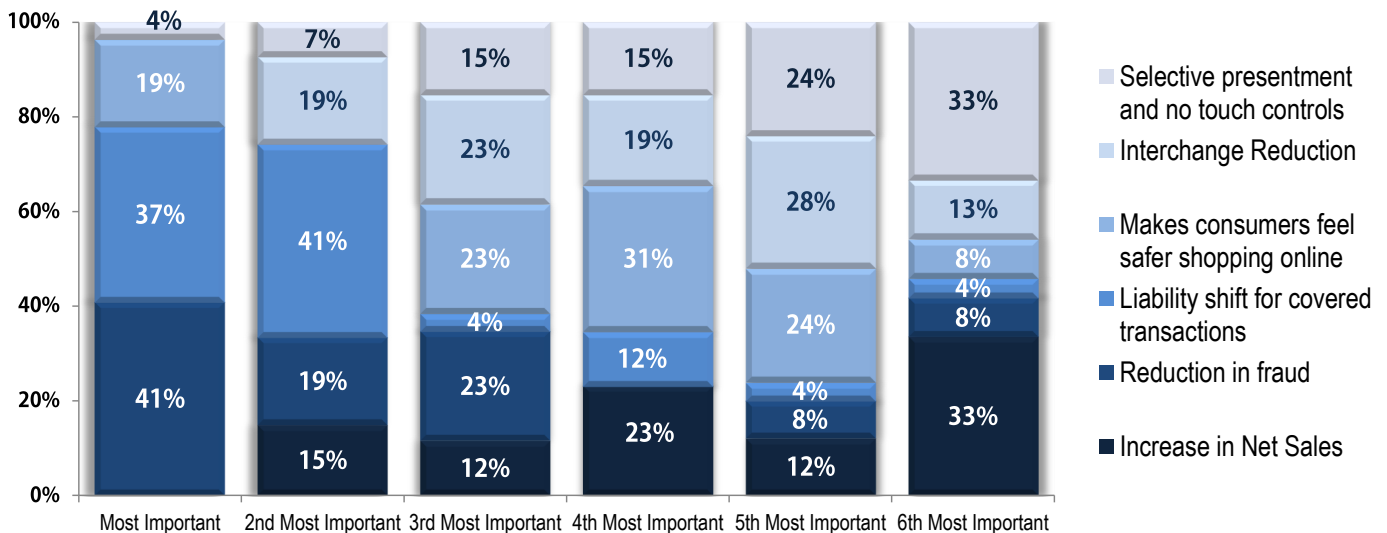
The share of merchants using Consumer Authentication that find these services valuable increased further from 90 to 92 percent since last year's survey, but each year this study also seeks to see if the reasons why organizations find Consumer Authentication valuable is changing.

So far with each year of the survey, the two most important benefits of using Consumer Authentication, as indicated by both merchants and all organizations supporting these services, are the reduction in fraud and the liability shift these programs provide. Which of these two is considered most important has been always been closely contested, while merchants have alternated between whether the liability shift or reduction in fraud is most important. Merchants were equally as likely to consider interchange reduction, reduction in fraud and the fact that Consumer Authentication makes consumers feel more secure when shopping online as the third most important benefit, whereas merchants historically, and all other organizations this year, have more definitively ranked interchange reduction as the third most important benefit.

Most Important Benefits of Consumer Authentication - All Organizations



Most Important Benefits of Consumer Authentication - Merchants



How Organizations Implement Consumer Authentication

Each year survey data has shown that how merchants implement Consumer Authentication, such as if they use Selective Presentment and how many different factors they consider, impacts reported satisfaction and results with these services.

The time it takes to implement Consumer Authentication varies based on merchant revenue, but is also contingent on whether the merchant needs to implement a new service provider or can simply “flip a switch” with an existing vendor who is already integrated.

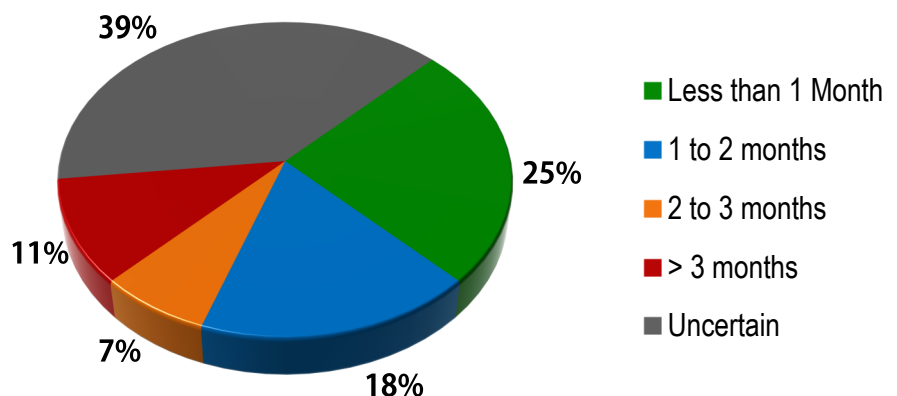
Results and success reported by organizations that use or support Consumer Authentication can depend on implementation factors. This section of the annual survey and report focuses on these implementation factors including how long it took to get Consumer Authentication up-and-running, and beyond whether or not organizations use or support Selective Presentment, what different factors and signals are used to determine when authentication is to be presented. This begins with baseline feedback from all merchants on what impact these programs may have had on the user experience, sales conversion and chargeback rates, then seeing how this differs across merchants based on whether they use Selective Presentment, and how many factors or signals they consider when making this decision.

Implementation Time

How long it takes a merchant to implement Consumer Authentication varies based on the size of the organization, as well as whether they are implementing these programs through a new vendor or simply “flipping a switch” to start using these services with an existing provider who is an integrated partner. Today, one-in-four merchants using Consumer Authentication reported they were able to implement and integrate these services into their business within one month, up from 17 percent of merchants who said this last year. It took only 18 percent of merchants more than two months to implement Consumer Authentication and just 11 percent of merchants needed more than 3 months to complete integration. The share of merchants uncertain how long it took to implement Consumer Authentication fell from 42 to 39 percent of all merchants leveraging these programs, while it is primarily enterprise merchants and those who first implemented Consumer Authentication five or more years ago who can’t remember or are uncertain how long implementation took.

In every year of the study there has been a strong positive correlation between merchant revenue and the time it takes to implement Consumer Authentication, with large organizations requiring more time. SMB merchants are more likely to be using an eCommerce platform or provider, many of whom are partnered or integrated with Consumer Authentication merchant plug-in (MPI) providers. Whereas 60 percent of merchants with annual revenue under \$5 million were able to implement Consumer Authentication in one month or less, only 13 percent of merchants with annual revenues exceeding \$50 million could say the same. It should again be noted, however, that merchants in the highest revenue category were the most likely to say they were uncertain how long implementation took, with 50 percent of enterprise merchants indicating this.

Merchant Implementation Time



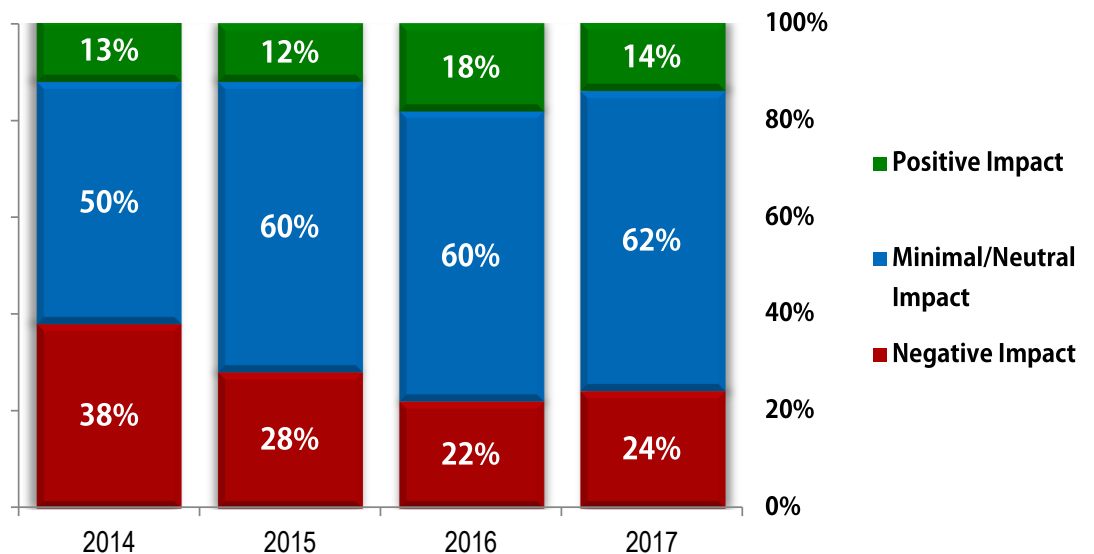
Impact on Conversion, Chargebacks & the User Experience

Merchants that are currently using Consumer Authentication with Selective Presentment are more than twice as likely to indicate these programs made a positive impact on the user experience compared to merchants who are presenting authentication on all transactions.

After citing a lack of need due to low online volume or fraud attempts, merchants not using or offering Consumer Authentication are most worried about the impact on user experience and sales, but are these concerns warranted and have changing trends affected the validity of these trepidations?

For the first time merchants not using Consumer Authentication were more concerned about how these services would impact the user experience than sales conversion as the primary reason they are not using these programs today, but it is likely that concerns about both are overstated. While nearly 40 percent of merchants reported a negative impact on user experience after implementing Consumer Authentication four years ago in the inaugural survey, less than one-in-four merchants using Consumer Authentication report this today. Those reporting a negative impact on the user experience after implementing Consumer Authentication increased slightly from last year, but this is within the margin of error.

Impact of Consumer Authentication on User Experience (Merchants)



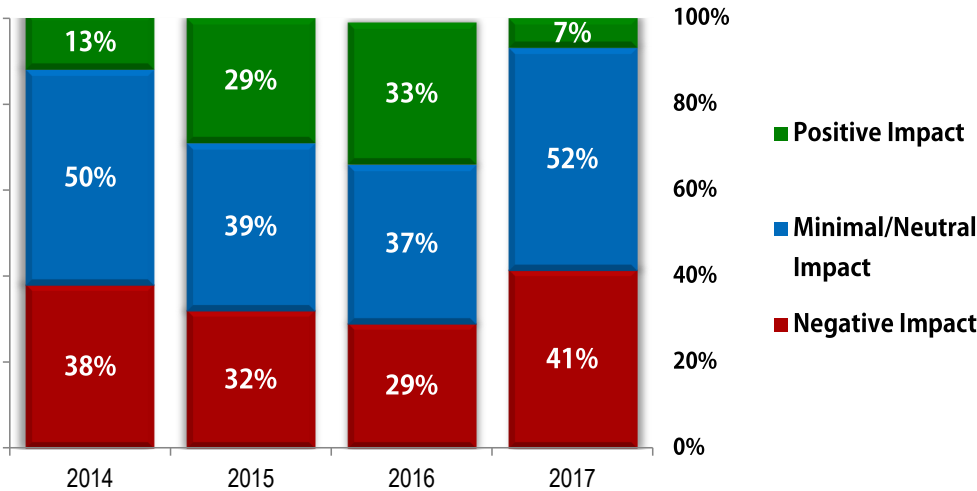
A notable shift in feedback from merchants using Consumer Authentication this year is that fewer are reporting a positive impact on sales conversion after implementing Consumer Authentication, down to 7 percent from one-third of merchants using these services last year. More of these merchants are now saying there is no effect on sales conversion (an increase of 15 percent from last year) rather than saying it has caused a negative impact (an increase of 12 percent from last year), but indications of both have risen.

More than two-thirds of fraud and eCommerce vendors and over 35 percent of payment providers who support Consumer Authentication said that merchant clients overall realized a positive effect on sales conversion after implementing Consumer Authentication.

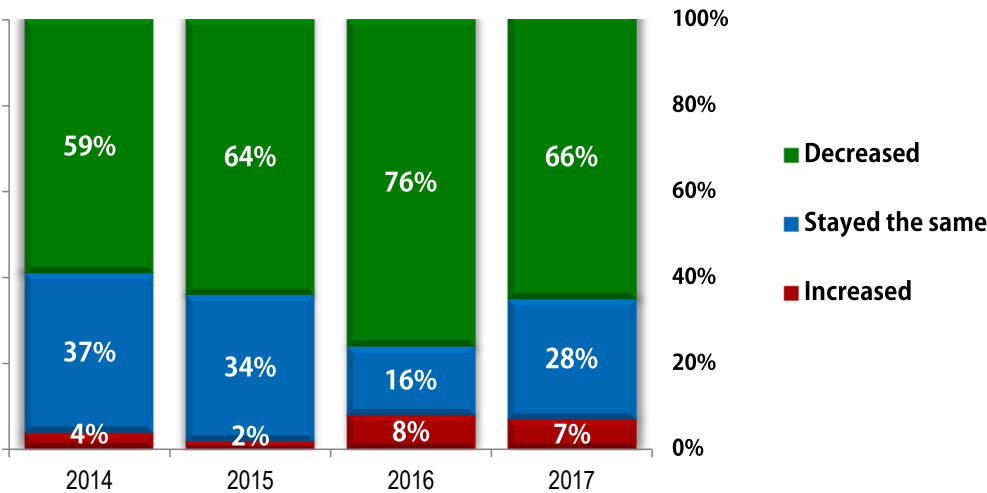
Changes in the survey population compared to years' past contributed to the increase in merchants using Consumer Authentication who reported a negative effect or no impact on sales conversion. This was primarily due to fewer merchants using Selective Presentment and more merchants only doing business in North America. There are several countries in Europe, Asia and other regions where Consumer Authentication programs are much more common and are expected to be used by cardholders, leading to little change in sales conversion. In each year of the survey, merchants doing business in one or more regions but not North America have been the merchants most likely to report a positive impact on sales conversion after implementing Consumer Authentication. While this still holds true this year, there are fewer merchants not doing business in North America that were represented in this year's survey.

The share of merchants who reported a reduction in chargebacks following the implementation of Consumer Authentication remains high at two-thirds of merchants using these services, down from last year but the second highest percentage in all four years of the survey. Depending on the country where the merchant and cardholder are located, merchants can receive the liability shift and avoid chargebacks on covered transaction, sometimes just by checking for cardholder enrollment in Consumer Authentication programs and without even requiring or presenting authentication.

Impact of Consumer Authentication on Sales Conversion (Merchants)



Impact of Consumer Authentication on Chargebacks (Merchants)



Deciding When to Present Authentication

Although the share of merchants using Consumer Authentication were less likely to be using Selective Presentment compared to past surveys, those that are leveraging Selective Presentment are even more sophisticated in doing so, including merchants that have only implemented Consumer Authentication in the last year or two.

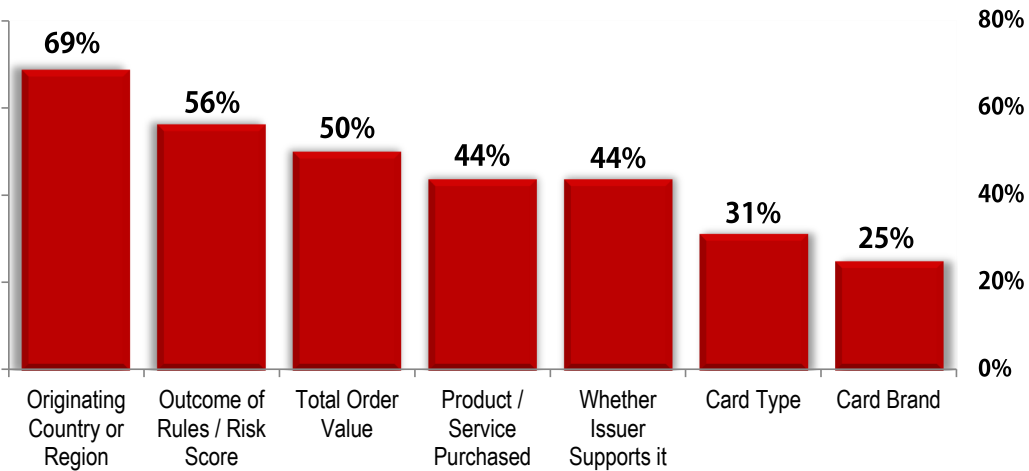
All merchants surveyed who had implemented Consumer Authentication within the past two years are using Selective Presentment.

In every year of the Consumer Authentication Survey the single most common factor determining whether or not a merchant will present authentication was the country or region from which the transaction was originating, although very few merchants today are looking at this factor alone. Two factors or order characteristics were considered by at least half of merchants using Selective Presentment in last year's survey, but there are three such factors being considered by at least half of merchants today. This additionally includes the outcome of a rules engine or risk score (56 percent) and the total order value (50 percent), while the good or service being purchased and whether or not the card issuer supports Consumer Authentication are factors each considered by 44 percent of merchants using Selective Presentment.

Merchants are considering more signals and attributes overall to decide when to present Consumer Authentication, with 94 percent of organizations considering 2 or more factors, 63 percent considering 3 or more, and 38 percent considering 4 or more. The average number of different signals or factors a merchant considers to decide if Consumer Authentication should be presented is 3.19, up from 2.97 last year. Relative to last year, merchants are 10 percent less likely to consider the transaction or cardholder originating country and 6 percent less likely to consider whether the card issuer supports Consumer Authentication, but this year merchants are more likely to look at the items purchased, card type, total order value and outcome of a risk score or rules engine, when deciding if authentication will be presented. The share of merchants who use Selective Presentment and consider more than one factor for deciding when to present authentication increased from 80 to 94 percent since 2016.

About 19 out of every 20 merchants using Selective Presentment consider two or more factors to decide if authentication should be presented, while 63 percent consider at least three and 38 percent consider four or more factors.

How Merchants Decide When to Present Consumer Authentication

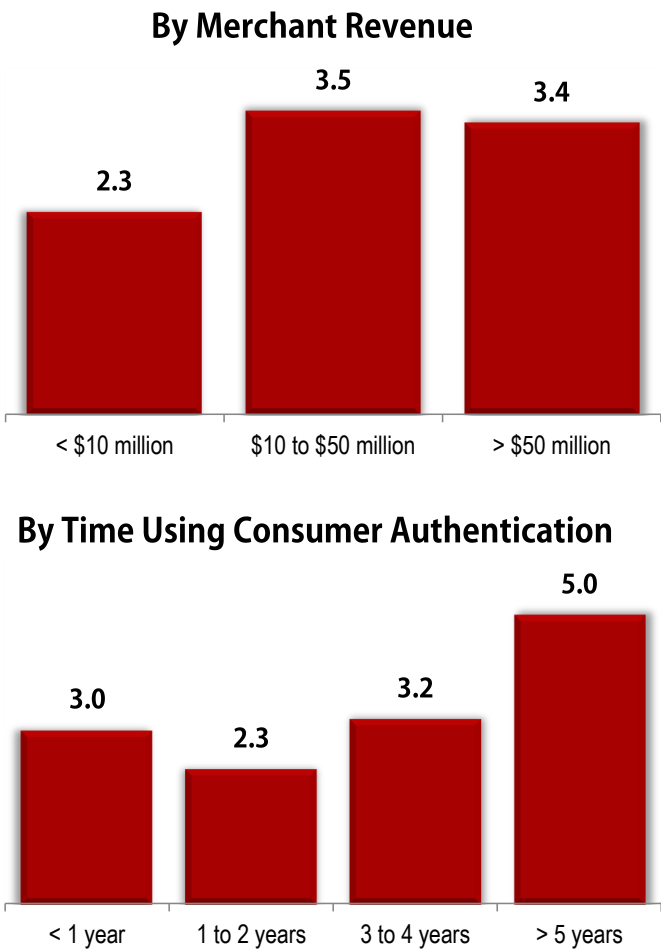


Higher revenue merchants are more likely to be using Selective Presentment and consider more factors, on average, than lower revenue merchants, but those who have been using Consumer Authentication for five or more years are considering the highest number of factors or signals to decide when authentication should be presented.

The number of factors or signals a merchant considers for deciding when to present authentication is correlated with their revenue and how long they have been using Consumer Authentication services. Merchants with annual revenues of \$10 million or less are considering 2.3 different signals or factors to decide when to present authentication, compared to about 3.5 different factors, on average, for merchants with annual revenues greater than \$10 million. SMB merchants primarily look at the transaction's originating country or region, dollar value and bundle of goods/services purchased, while at least half of enterprise merchants (those generating more than \$50 million in annual revenue) are also considering the outcome of a rules engine or risk score and whether or not the card issuer supports Consumer Authentication programs.

Merchants with revenues greater than \$50 million per year are the group most likely to have been using Consumer Authentication for five or more years, as would be expected considering that most of these organizations have been around longer than their lower revenue counterparts. How long a merchant has been using Consumer Authentication, however, has a stronger influence than revenue on the number of different factors being considered to decide when they will present or require authentication. Despite being the group least likely to use Selective Presentment, merchants that have been using Consumer Authentication the longest are considering the most factors or signals for deciding when to present authentication, at 5.0 on average. Interestingly, merchants who have been using Consumer Authentication for 2 years or less, of which 100 percent are using Selective Presentment today, consider just 2.3 signals on average.

Average Number of Factors Merchants Consider with Selective Presentment:



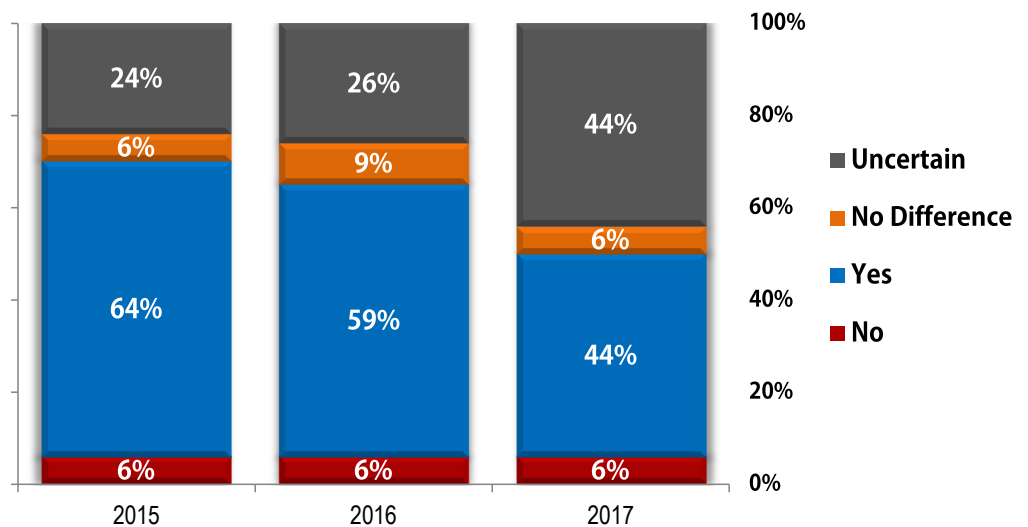
How Selective Presentment Impacts Results

For three consecutive years, just 6 percent of merchants that use Selective Presentment said it did not lead to better results with Consumer Authentication.

One of the primary goals of the annual Consumer Authentication Survey is to get the industry's input for understanding not only how merchants implement Consumer Authentication, but also how this impacts results. This is understood by directly asking survey respondents whether or not they realized improvements or benefits after implementing Selective Presentment, as well as comparing reported satisfaction and impacts of Consumer Authentication between those who do and those who do not use Selective Presentment today.

For three consecutive years, just 6 percent of merchants using Consumer Authentication with Selective Presentment have said "No," that it did not lead to better results. There was an increase this year in merchants who say they are uncertain whether Selective Presentment improved results, but this was likely influenced by the fact that all merchants who have started using Consumer Authentication in the past two years are using Selective Presentment. Most of these merchants implemented Consumer Authentication with Selective Presentment right from the start, and are uncertain if results are better because they don't have an alternative with which they can compare. The share of merchants who are uncertain if Selective Presentment improved results jumped to 44 percent, equal to the share of merchants who definitively said "Yes," that it did bring improvements. Those who say Selective Presentment made no difference fell from 9 to 6 percent since 2016.

Has Using Selective Presentment Improved Results (Merchants)



Although nearly half of merchants using Selective Presentment are uncertain if it improved results these merchants were more twice as likely to indicate that Consumer Authentication made a positive impact on the user experience.

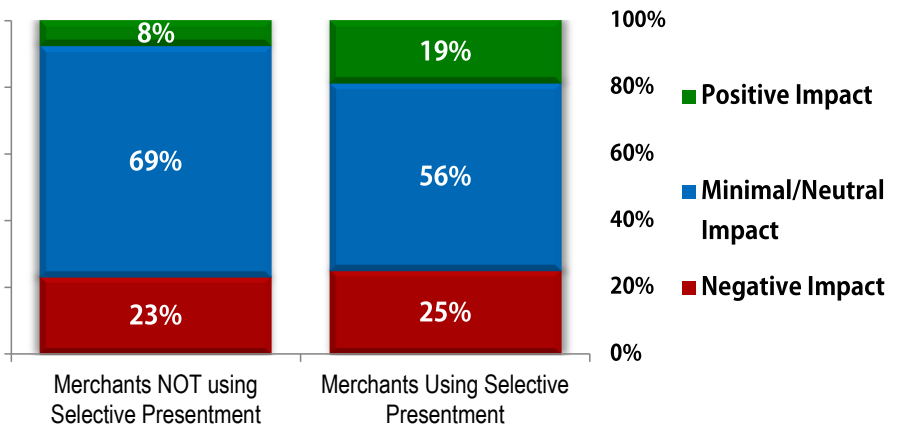
Looking at the reported impacts of Consumer Authentication on the user experience and charge-backs between merchants using Selective Presentment and those who are not, there are some notable differences, as well as trends that have been identified across multiple years of this study.

The share of all merchants using Consumer Authentication who reported a negative impact on the user experience has fallen from 38 percent in the inaugural study to less than 25 percent of merchants using these services today.

Over 14 percent of merchants using Consumer Authentication said that these programs made a positive impact on the user experience, however, there is a gap between merchants using Selective Presentment who indicate this (19 percent) and those not using Selective Presentment (8 percent) who can say the same. There is little difference in the percentage of merchants who indicated a negative impact on user experience, whether the merchant is using or not using Selective Presentment.

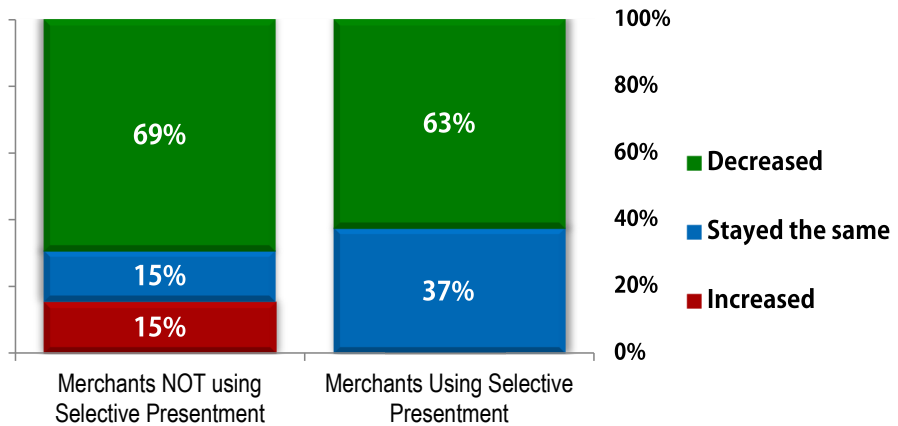
One of the benefits of Consumer Authentication is the reduction in chargebacks, and in each year of the Consumer Authentication Survey data has shown that the use of Selective Presentment does not impede this benefit. While 66 percent of all merchants using Consumer Authentication reported a reduction in chargebacks from using these services, 63 percent of merchants using Consumer Authentication with Selective Presentment said the same thing. The remaining 37 percent of merchants using Selective Presentment indicated the impact of chargebacks stayed the same and did not see an increase.

Impact of Consumer Authentication on the User Experience by Merchant use of Selective Presentment



One of the primary benefits of using Consumer Authentication, that it can provide a reduction in chargebacks, stays in tact whether a merchant presents or requires authentication on every or only select transactions.

Impact of Consumer Authentication on Chargebacks by Merchant use of Selective Presentment



Other Fraud Detection Tools in Use

Merchants that Use Consumer Authentication

Merchants who use Consumer Authentication services are more likely to be using device ID and fraud scoring services relative to those who do not use Consumer Authentication.

Consumer Authentication is one component of a risk management strategy that should include additional fraud detection tools and signals. Merchants that are using Consumer Authentication today use an additional 7.7 fraud management tools or services on average. Payment providers that offer or support Consumer Authentication offer or support an additional 8.3 fraud management on average, while eCommerce and Fraud vendors offer or support an additional 6 tools or services.

Nearly 80 percent of merchants using Consumer Authentication are using at least five additional fraud management tools or services, while 92 percent are using two or more additional tools. There were eight fraud management tools or services used by more than half of merchants with Consumer Authentication in place. Beyond AVS (53 percent) and Card Security Codes (81 percent), this included Fraud Scoring (69 percent), Velocity Checks (69 percent), Rules (67 percent), IP Geolocation (64 percent), Manual Review Interface (64 percent) and Device ID (58 percent).

Fraud Protection Tools Used by Organizations Supporting Consumer Authentication	Merchants	Fraud and eCommerce Vendors	Payment Providers
Card Security Codes (CVV)	81%	67%	73%
Fraud Scoring	69%	53%	68%
Velocity Checks	69%	20%	73%
Rules	67%	40%	73%
IP Geolocation	64%	40%	68%
Manual Review Interface / Tools	64%	20%	55%
Device ID	58%	53%	50%
AVS	53%	27%	73%
Proxy Detection	42%	20%	41%
Reverse Lookups (Phone or Address)	39%	7%	32%
Email Authentication	33%	27%	41%
Telephone Number Identification	33%	27%	23%
Modeling / Analytics	28%	27%	36%
Identity Authentication	25%	67%	41%
Data Sharing	17%	20%	14%
Operational Platform	14%	13%	27%
Biometric Techniques	8%	33%	32%
Out of Wallet Checks / KBAs	3%	27%	5%
Other	3%	13%	5%

Merchants that do NOT Use Consumer Authentication

Merchants not using Consumer Authentication are more reliant on AVS as it is the second most common tool used, whereas with merchants who use Consumer Authentication today AVS is the eighth most used tool.

Merchants who do not use Consumer Authentication today use slightly fewer tools and services compared to merchants that are currently using these programs, at 7.4 versus 7.7 other tools on average (if Consumer Authentication were included it would be 7.4 versus 8.7 total tools/services in use). Whereas 78 percent of merchants using Consumer Authentication employ an additional five or more tools or services, only 65 percent of merchants not using Consumer Authentication have five or more fraud management tools in place, while 79 percent have three or more. Fraud and eCommerce vendors that don't offer or support Consumer Authentication do offer or support 8.6 other fraud management tools on average, while payment providers that don't offer or support Consumer Authentication only support 4 other fraud management tools on average.

Card Security Code (CVV) and AVS checks are the most common fraud management tools utilized by merchants who do not use Consumer Authentication, and just four other tools or services are used by at least half of these merchants. This includes Rules (65 percent), IP Geolocation (58 percent), Manual Review Interface (58 percent) and Velocity Checks (50 percent), which are also all used by more than half of merchants using Consumer Authentication. Merchants that do not use Consumer Authentication were much less likely to be using Fraud Scoring (46% versus 69%) or Device ID (42% versus 58%). Similar to how higher revenue merchants are more likely to be using Consumer Authentication, enterprise merchants are more likely to use these fraud management tools as well.

Fraud Protection Tools Used by Organizations NOT Supporting Consumer Authentication	Merchants	Fraud and eCommerce Vendors	Payment Providers
Card Security Codes (CVV)	81%	50%	67%
AVS	69%	25%	67%
Rules	65%	63%	67%
IP Geolocation	58%	69%	0%
Manual Review Interface / Tools	58%	63%	33%
Velocity Checks	50%	50%	67%
Proxy Detection	48%	44%	0%
Fraud Scoring	46%	69%	0%
Email Authentication	44%	63%	0%
Device ID	42%	63%	0%
Reverse Lookups (Phone or Address)	40%	44%	33%
Telephone Number Identification	35%	69%	0%
Modeling / Analytics	33%	44%	0%
Identity Authentication	25%	50%	33%
Data Sharing	13%	38%	0%
Operational Platform	12%	13%	0%
Biometric Techniques	10%	19%	0%
Out of Wallet Checks / KBAs	6%	19%	0%
Other	4%	13%	33%
None	2%	0%	0%

Conclusion

The 4th Annual Consumer Authentication Survey continued to identify recurring trends in the use and implementation of Consumer Authentication programs, and uncovered new findings or changing trends relative to past surveys. There were some shifts in the distribution of survey respondents that influenced some changes as well. Merchants have been the type of organization most represented in all four years of the survey, but the share of SMB merchants (those earning less than \$10 million per year in revenue) doubled from last year. These merchants are less likely to do business internationally, use Consumer Authentication or use Selective Presentment relative to large and enterprise merchants.

More market education is needed as less than half of merchants not using Consumer Authentication today are aware of features like Selective Presentment or benefits like interchange reduction. In the meantime, more features and benefits will be rolling out with 3DS 2.0.

Although the share of all merchants surveyed using Consumer Authentication programs today remained flat, the share of merchants doing business internationally and who are using Selective Presentment each fell from last year, influenced by the increase in SMB merchants surveyed. Regardless of revenue, most merchants who have implemented Consumer Authentication recently are showing high levels of sophistication in how they use it. All merchants surveyed who have implemented Consumer Authentication in the past two years are using Selective Presentment, and these merchants are looking at nearly 3 different signals or factors, on average, when deciding whether or not to present authentication.

Although merchants who have been using Consumer Authentication longer are less likely to be using Selective Presentment, these merchants that are selectively choosing when to require authentication are considering more factors on average. Merchants who have been using Consumer Authentication for five or more years consider an average of five different factors or signals for deciding when to present authentication, while enterprise merchants (annual revenue greater than \$50 million) also consider more factors or signals than SMB merchants, at 3.4 versus 2 different factors on average.

Even more so than before, now that the 3DS 2.0 Specification and evolving authentication features have been published, there is a need to ensure the market is fully aware of the benefits and implementation options when leveraging Consumer Authentication services. While organizations that currently use or support these programs continue to show increased sophistication and knowledge, many may not be aware of additional benefits from 3DS 2.0. Education and awareness factors amongst organizations that do not use or support Consumer Authentication today have remained stagnant or have fallen since the 2015 survey, while those that have implemented Consumer Authentication recently are showing more awareness of features like Selective Presentment by using it right away. This may imply that merchants more educated about the details and benefits of using Consumer Authentication have been the ones to have added it over the past couple years, while many merchants not using these programs remain unaware of the features and benefits, perhaps impeding them from considering using these services.

Key trends and findings from the 2017 Consumer Authentication Survey:

While this year's study showed a decline in the share of merchants using Consumer Authentication with Selective Presentment, those that are presenting authentication selectively are considering more factors or signals, on average, for determining when to present or require authentication.

Currently, over three-fourths of merchants who use Consumer Authentication report it led to a neutral or positive impact on the user experience and over two-thirds say it resulted in a reduction in chargebacks.

- ⇒ The 2017 Consumer Authentication Survey was more diverse in terms of including more non-merchant organizations and more SMB merchants in the total survey population, which influenced survey trends such as fewer merchants selling internationally and fewer using Selective Presentment compared to years' past.
- ⇒ Although merchant use of Consumer Authentication stayed flat while use of Selective Presentment declined relative to the previous three years, there are signs that merchants using Selective Presentment are more sophisticated than ever in terms of their implementation. On average, merchants are considering 3.2 different factors or signals to decide when to present authentication, while 94 percent of merchants consider multiple signals (up from 80 percent in 2016) and 38 percent look at four or more factors (up from 29 percent in 2016). Enterprise merchants are the most likely to be using Selective Presentment and consider the most factors or signals for deciding when to present authentication.
- ⇒ A trend identified in each year of the Consumer Authentication Survey that continued into 2017 is the disparity in use of Consumer Authentication between merchants that do business internationally and those who only sell goods or services to North America. Even though the share of merchants doing business only in North America that are using Consumer Authentication increased from 29 to 36 percent in 2017, merchants doing business in one or more regions but **not** North America are more than twice as likely to be using Consumer Authentication at 80 percent.
- ⇒ In each of the previous three years of the Consumer Authentication Survey, merchants cited the perceived impact on sales as the primary reason why they are not using these services. This fell to the third most cited reason this year, behind believing there is little or no need for Consumer Authentication services based on low online volume or fraud attempts, and concerns about how these programs will impact the user experience. Keep in mind that half of merchants not using Consumer Authentication are not aware of the ability to use Selective Presentment, while three-out-of-four merchants actually using Consumer Authentication report a neutral or positive impact on user experience, and those using Selective Presentment are more than twice as likely to report a positive impact on the user experience.
- ⇒ Since the inaugural Consumer Authentication Survey, merchants and all organizations have continued to rank the reduction in fraud and the liability shift for covered transactions as the two most important benefits. The 2017 survey additionally asked organizations to rank the most important features and improvements that will come with evolving 3DS 2.0 Protocol, of which merchants and other organizations were most excited about better integration with merchants leading to a more seamless and intuitive Consumer Authentication experience, and support for in-app, mobile and other non-browser purchase channels.

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Use of **Consumer Authentication** in eCommerce



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The Fraud Practice Inc.
1200 Tarpon Woods Blvd. O-1
Palm Harbor, FL 34685
Direct: 941-244-5361

David Montague
The Fraud Practice Inc.
www.fraudpractice.com/contact

Justin McDonald
The Fraud Practice Inc.
www.fraudpractice.com/contact