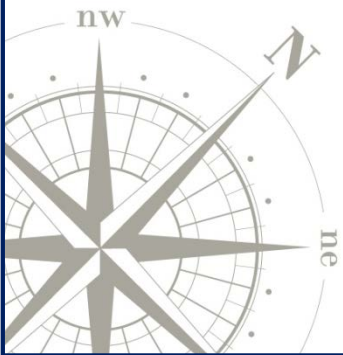


Study of Mobile Banking & Payments

Mobile Wallet Report



March 2017



Mobile payments and wallets are hot topics in the payments space, with a variety of providers competing for consumers' attention.

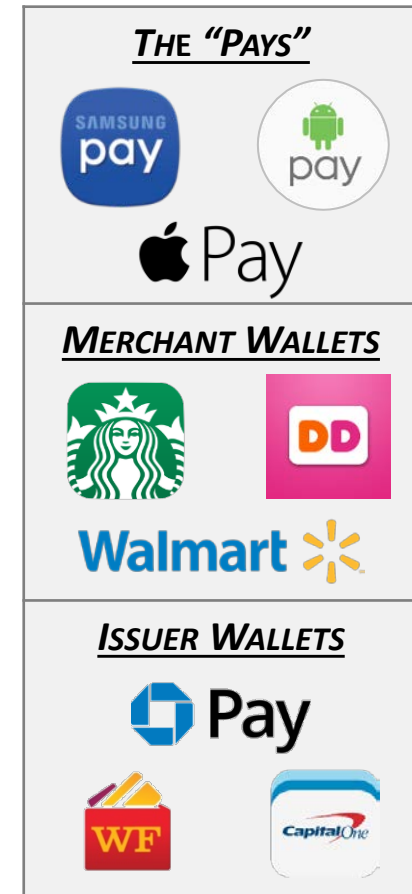
Mobile Payments Vs. Mobile Wallets

- A **mobile payment** is any type of payment made using a mobile device. Examples include bill pay, in-app/online purchases, in-store purchases, and P2P transfers.
- A **mobile wallet** is an app that stores payment cards, tickets, loyalty cards, receipts, vouchers and other items that might be found in a conventional wallet.

Study Methodology*

- The primary focus of this study is on wallet apps that enable consumers to make in-app and in-store purchases.
- Findings are based on results from a **January 2017** survey that sampled **1,514 U.S. consumers** over the age of 18 who meet the following criteria:
 - Own a smart phone; and
 - Have a checking account, debit card, and/or credit card.

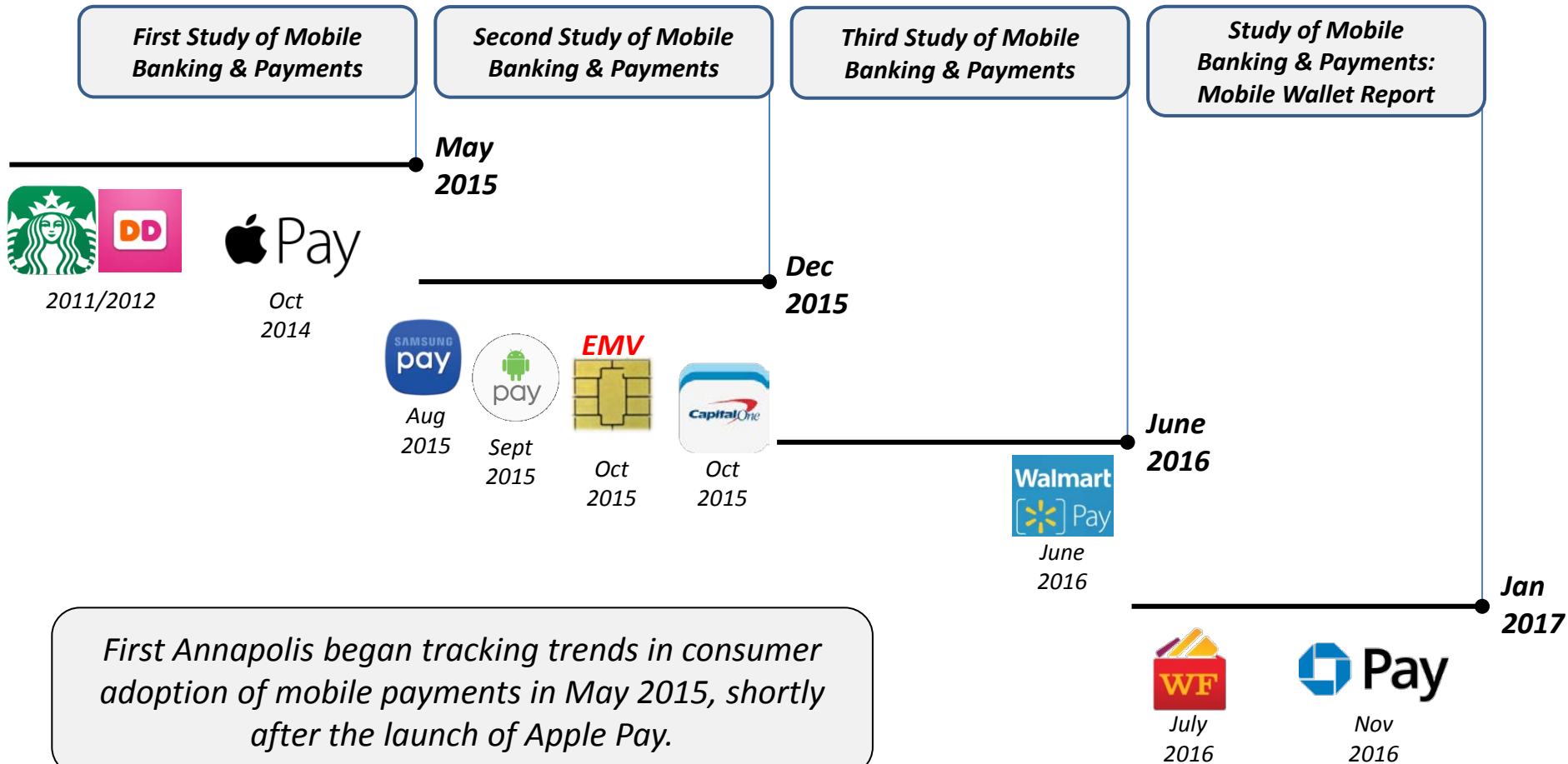
Notable Mobile Wallets



*A more detailed overview of the methodology is included in the Appendix.

Mobile wallets have proliferated over the past year, with issuers introducing proprietary solutions to compete with Apple, Samsung, and Android Pay.

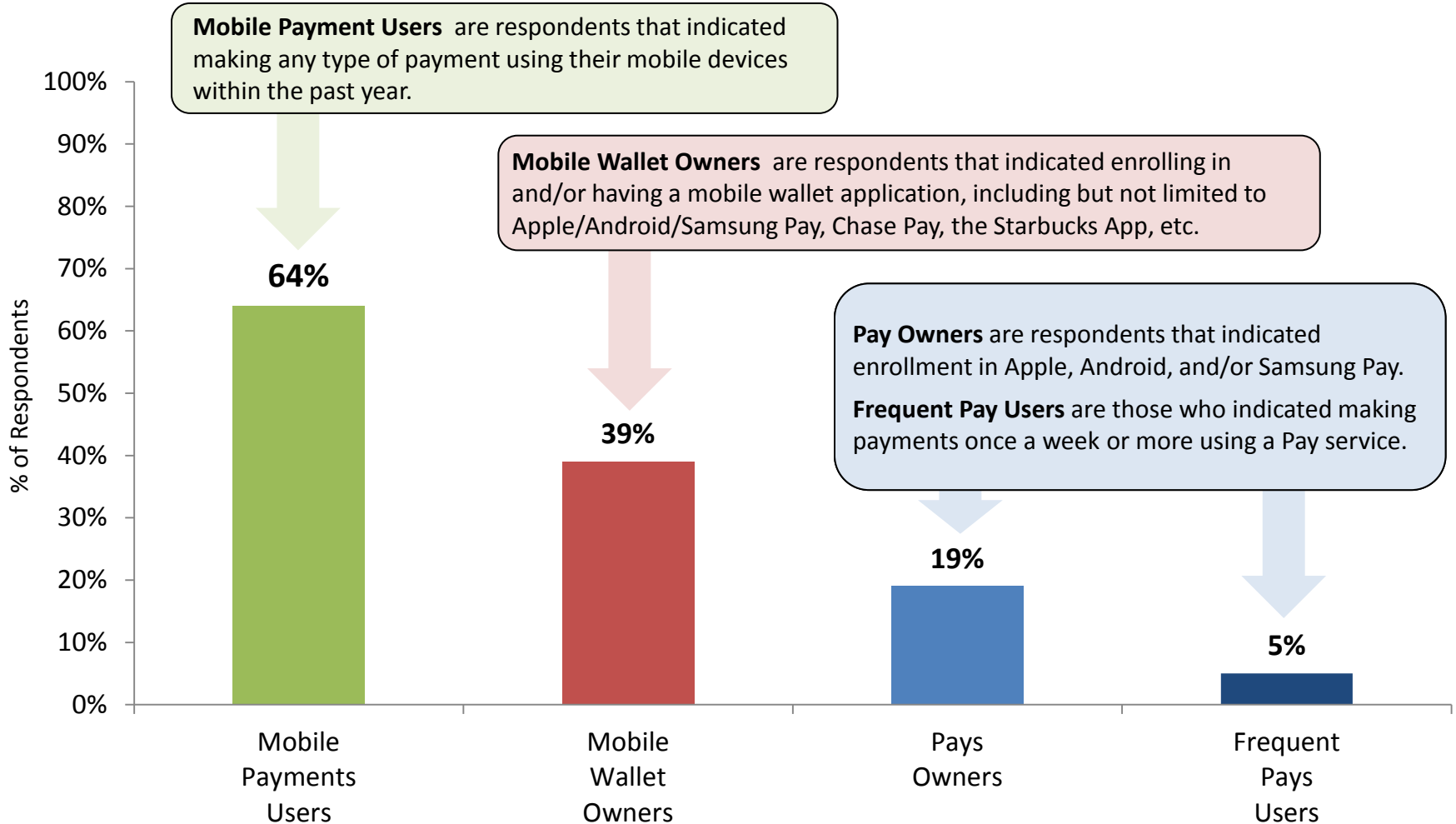
Timeline of Mobile Wallet Applications



Two thirds of respondents have made a mobile payment, while roughly two out of five have a mobile wallet—but only a handful are frequent Pay users.

January 2017 - Mobile Payments and Mobile Wallet Adoption

N = 1,514



Study results highlight important trends in mobile payments adoption, some of which trends were as expected; others surprised us.

Observations

1

Adoption is mass-market

- **64%** of respondents **made a mobile payment** in the last year.
 - More than **85%** of those **under 35** have made a mobile payment;
 - So have **36%** of those **over 65**.

2

Adoption has plateaued

- Mobile payment adoption levels increased dramatically over the past 18 months, but have **not changed significantly** during the past six.
- **39%** of respondents **have a mobile wallet**; of those, **49%** are enrolled in a **Pay**.
- Penetration and activation levels for Apple Pay have leveled off.

3

Frequency of use is increasing; further potential remains

- **32%** of Pays owners are **‘frequent’ users**—up from ~23% six months ago.
- Most Pays users report using their Pay **more often now** than they used to.
- Satisfaction with mobile wallets apps is high, and **36%** of mobile wallet users would use mobile payments for **“almost all”** of their purchases, if they could.

4

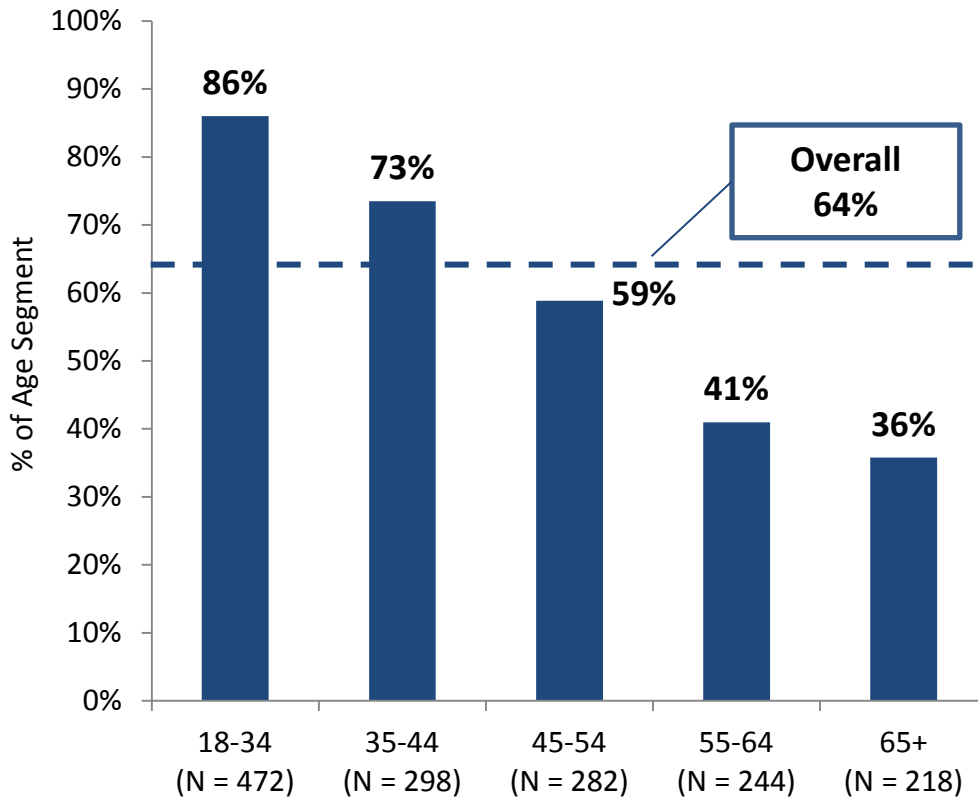
Consumers want bank solutions

- Consumers want **one payment app** on their phone—and they want **their bank** to provide it.

Two-thirds of consumers have made a payment using their mobile device within the past year, but, as expected, there is significant variation among age groups.

Mobile Payments Usage by Age

“Have you made a payment using your mobile device any time within the last 12 months?”

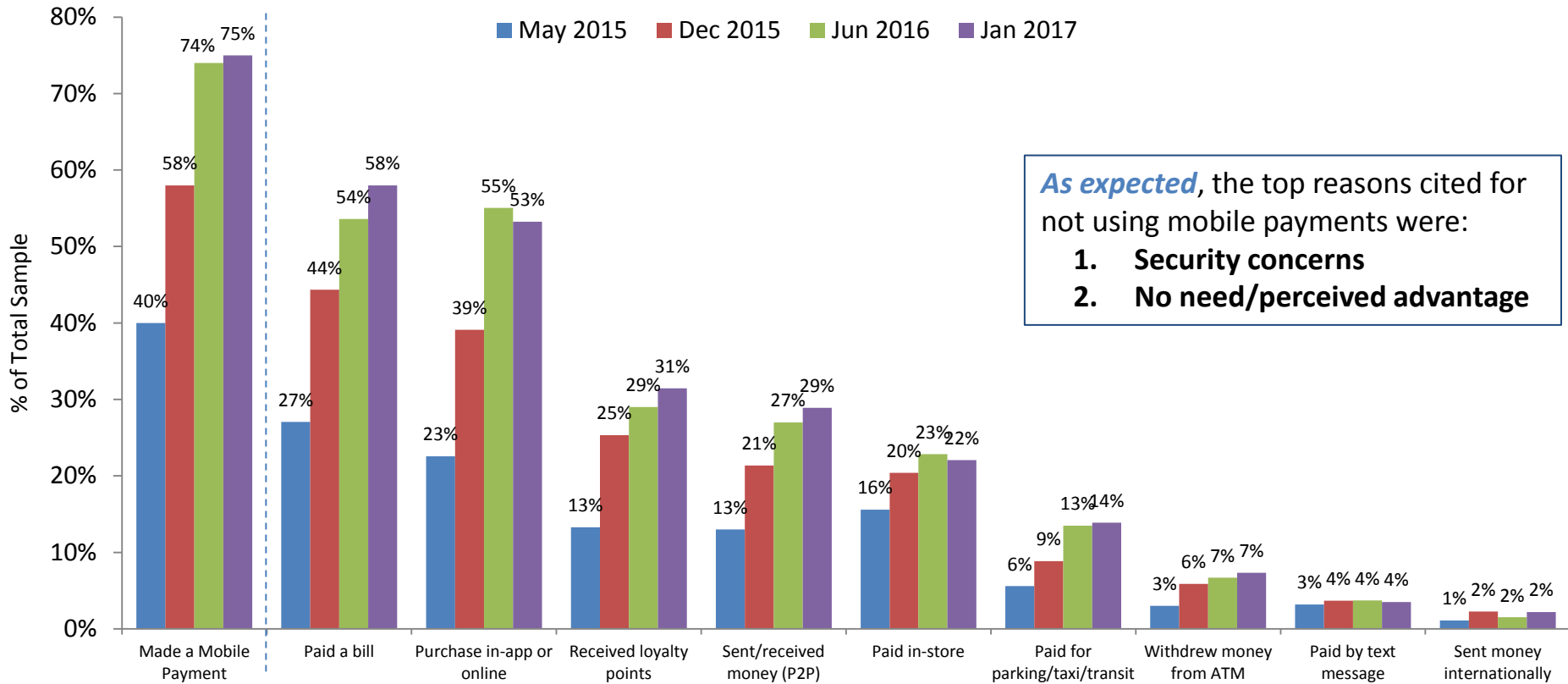


- **As Expected:** Usage rates for Millennials are high: **more than 85%** of respondents under 35 have made a mobile payment.
- **Surprising:** While usage levels are higher among younger consumers, **more than one-third** of respondents 65 or older have made a mobile payment.

There has been surprisingly little change in reported adoption levels over the past six months, for any category of mobile payment.

Mobile Payments by Type*

“Which of the following types of payments have you made using your mobile phone within the last 12 months?”
Respondents Ages 18 – 54



As expected, the top reasons cited for not using mobile payments were:

- Security concerns**
- No need/perceived advantage**

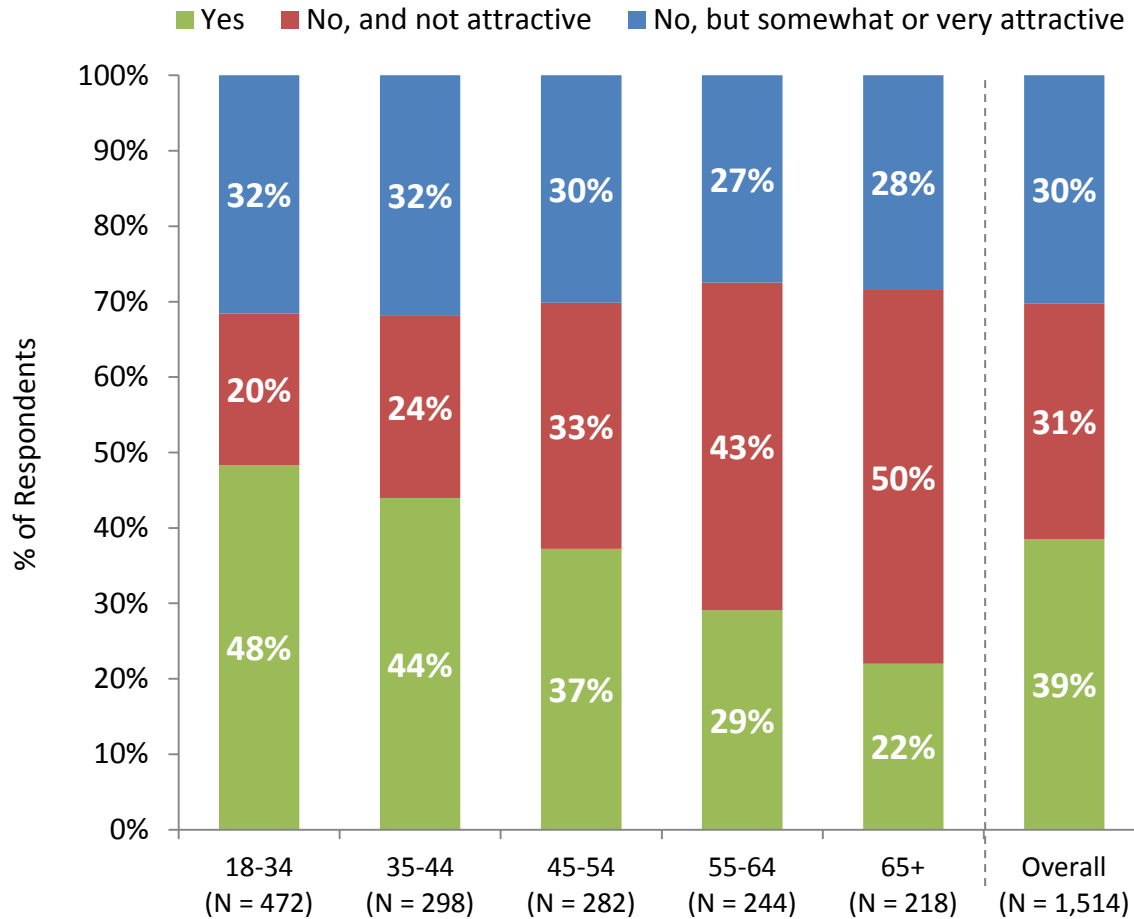
Jan 2017 All Ages	64%	49%	44%	26%	23%	19%	12%	6%	3%	2%
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*To normalize time series data, the graph only includes respondents between age 18 and 54.
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39% of respondents say they have a mobile wallet on their phone, while **31%** do not own a mobile wallet and are uninterested in the concept.

Mobile Wallet Penetration & Interest

“Do you currently have a mobile wallet app on your phone?” / “How attractive do you find the idea of a mobile wallet?”

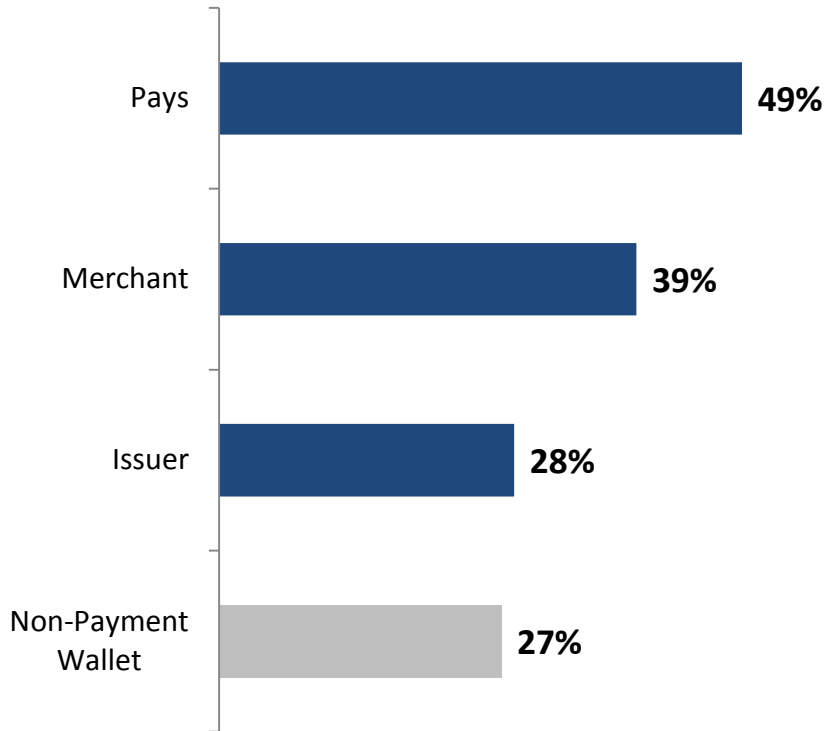


- **As Expected:** Younger respondents are more likely to have a mobile wallet.
- **As Expected:** Older non-wallet owners are more likely to have no interest in a mobile wallet.
- **Surprising:** **70%** of consumers have made up their mind about mobile wallets, and that figure is **relatively constant** across age segments.

The Pays are the most frequently cited wallet type, cited by **49%** of wallet owners, with Apple Pay being the most common.

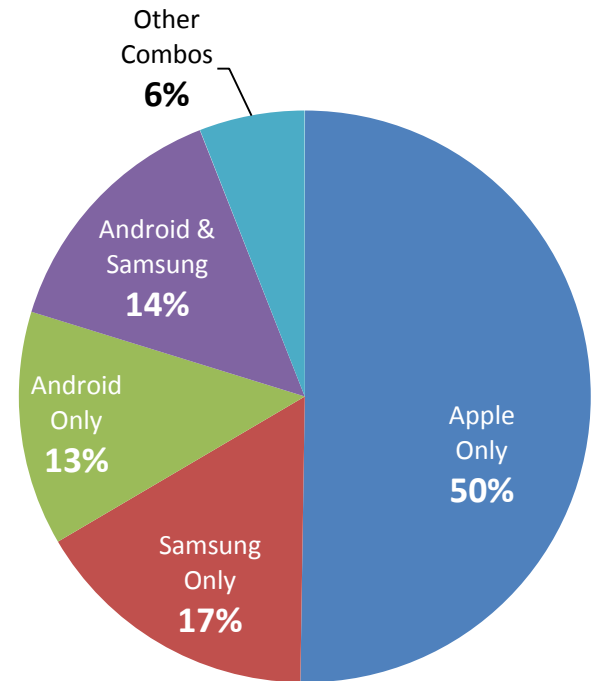
Wallet Ownership by Type

% of Wallet Owners
(N=583)



Pays Mix

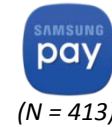
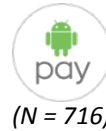
% of Pays Owners
(N = 293)



As Expected: **42%** of those with a Pay or Issuer wallet also have at least one merchant wallet.

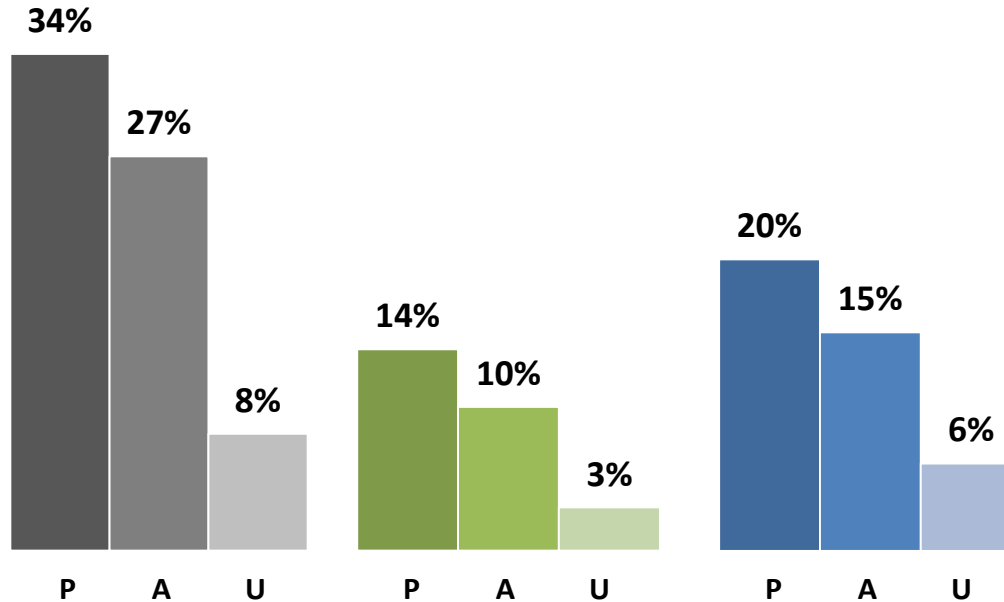
Apple Pay has the highest penetration, activation, and usage (PAU) metrics, as expected with an 11-month head start.

Current Pay Metrics
% of Compatible Devices



Surprising:

Apple Pay has achieved **more than 30% penetration** of its compatible device base just over **two years from launch**; most new payment technologies have taken longer to reach similar levels.



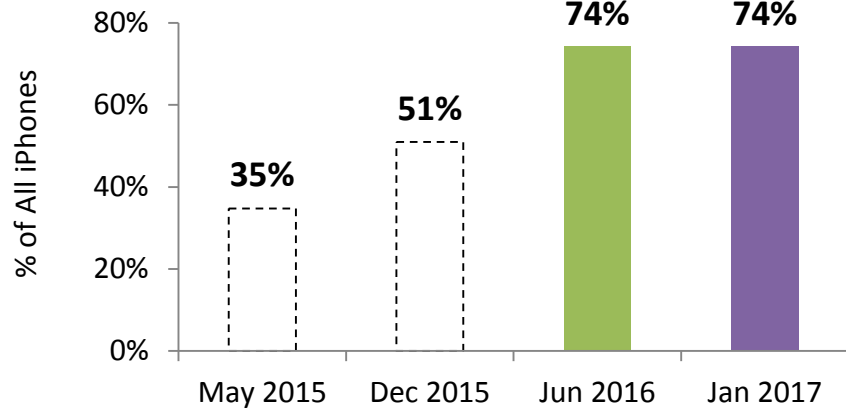
As Expected:

Samsung Pay **outperforms Android Pay**, likely due to higher merchant acceptance with its MST technology, as well as consumer incentives.

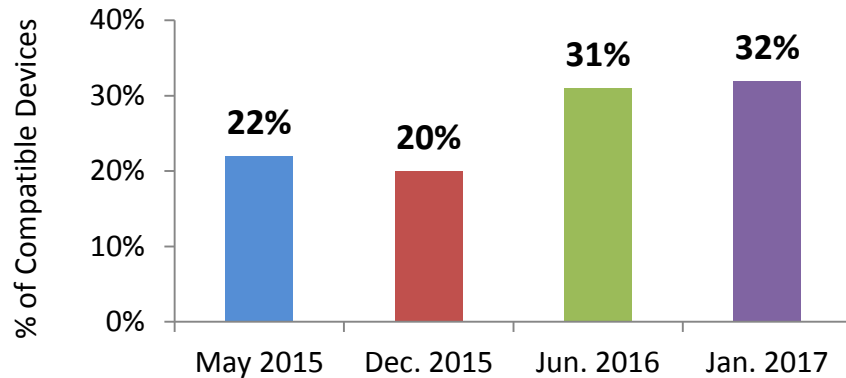
Penetration – % enrolled in Pay
Activation – % have used Pay
Usage – % ‘frequent’ users (use 1/week or more)

Apple Pay’s user base appears to be stabilizing in the short-term, as growth of compatible devices slows and penetration and activation metrics level off.

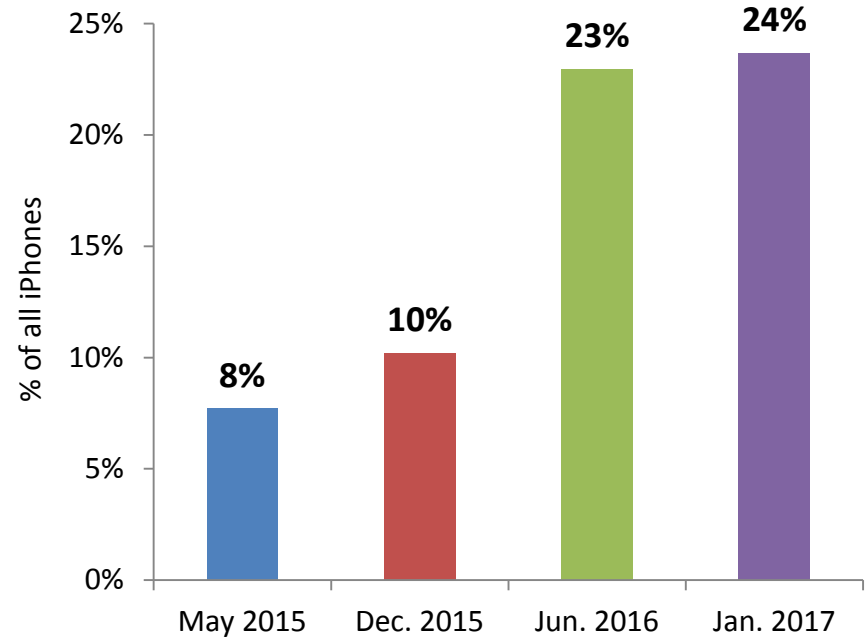
Apple Pay Compatible Devices*
% of all iPhones



Apple Pay Users
% of compatible iPhones



Apple Pay User Base
% of all iPhones



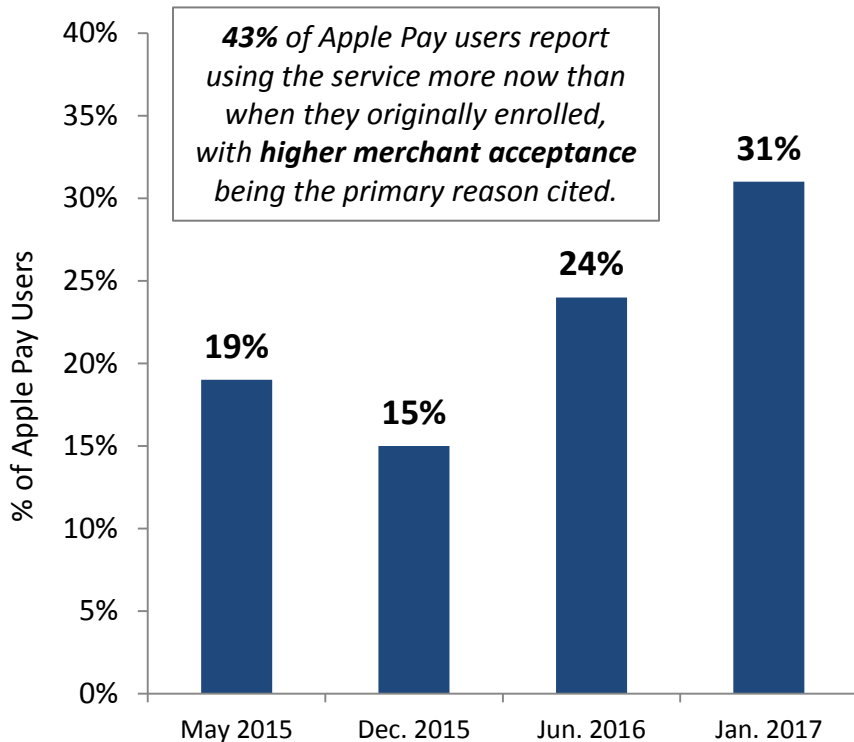
Longitudinal data based on consumers 18-54

*Representative device compatibility not captured in earliest studies; 2015 data from ComScore.com.
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Apple Pay usage is increasing; as expected, Samsung and Android Pay have achieved higher rates of frequent users more quickly than Apple Pay.

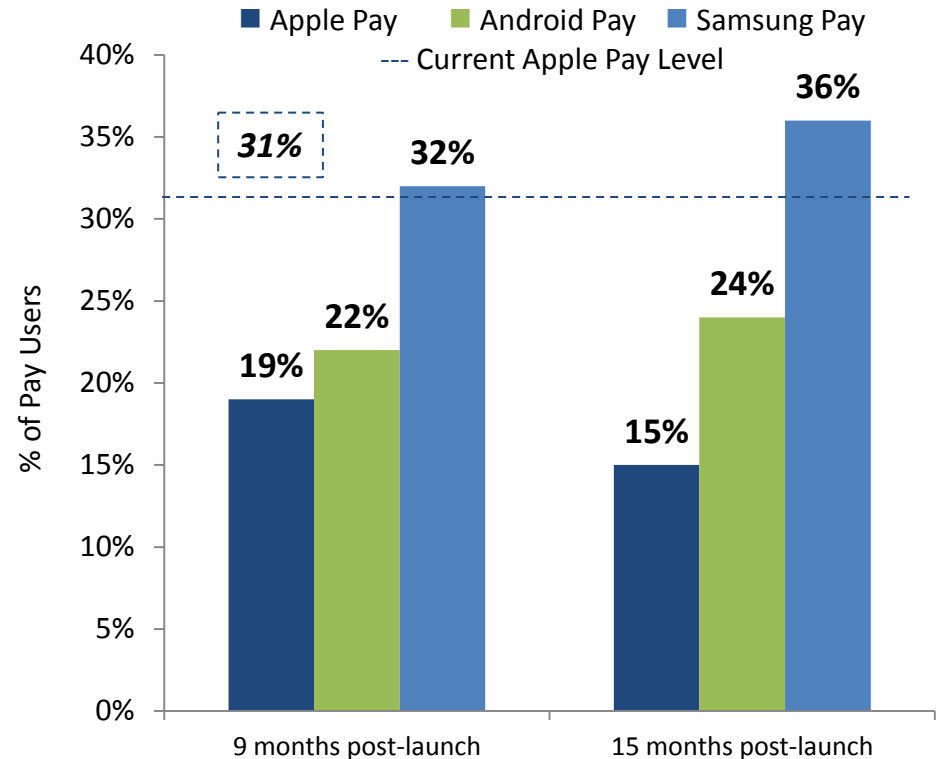
Apple Pay ‘Frequent Users’

Use Apple Pay 1/week or More



Post-Launch Comparison*

Use Pay 1/week or More



Longitudinal data based on consumers 18-54

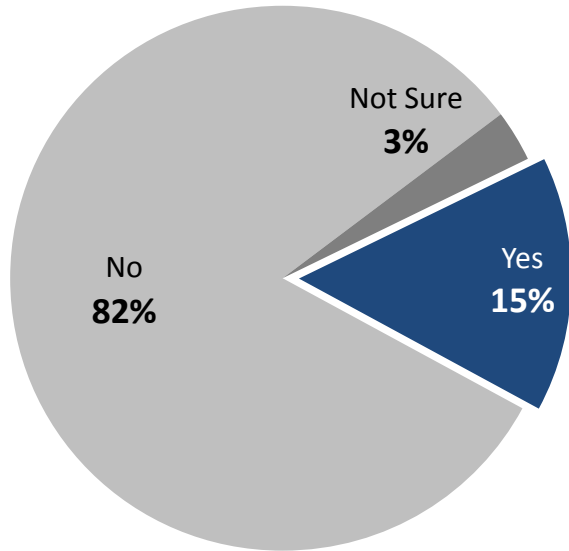
User satisfaction levels are, and remain, almost universally high across all three Pays.

*Apple Pay data as of May 2015 and Dec 2015; Android Pay and Samsung Pay data as of Jun 2016 and Jan 2017.

15% of respondents indicated they have a merchant payment solution, with Starbucks cited the most frequently.

Overall Merchant Wallet Penetration

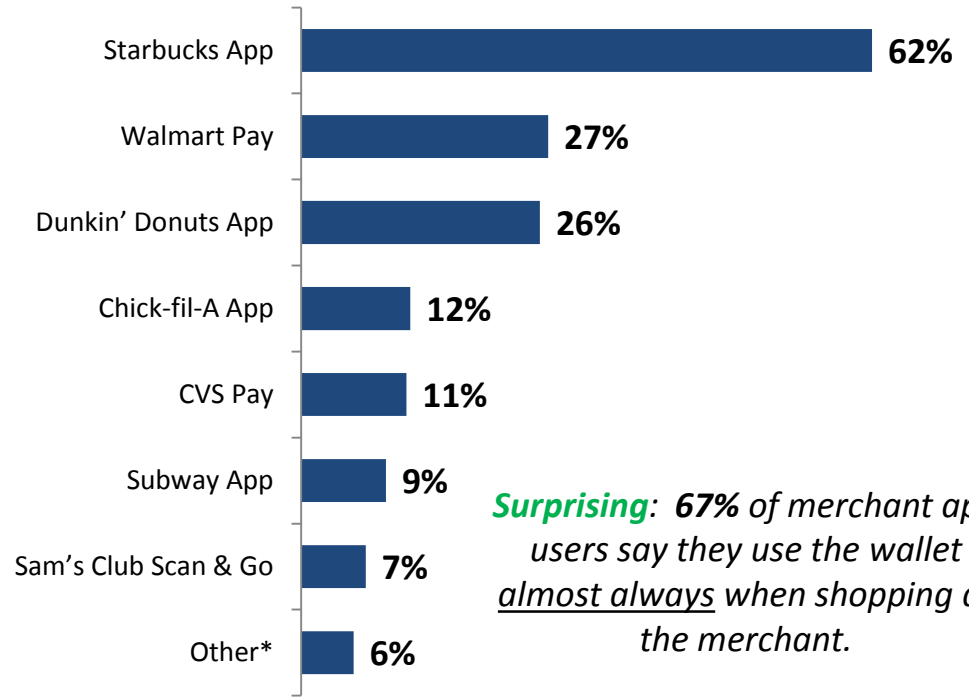
“Do you currently have a merchant wallet on your phone?”
(N = 1,514)



The average merchant wallet user has 1.6 merchant wallet applications.

Merchant Wallet Penetration by App

“Please indicate which of the following merchant wallet apps you have.”
(N = 229)



Surprising: 67% of merchant app users say they use the wallet almost always when shopping at the merchant.

% of Merchant Wallet Users

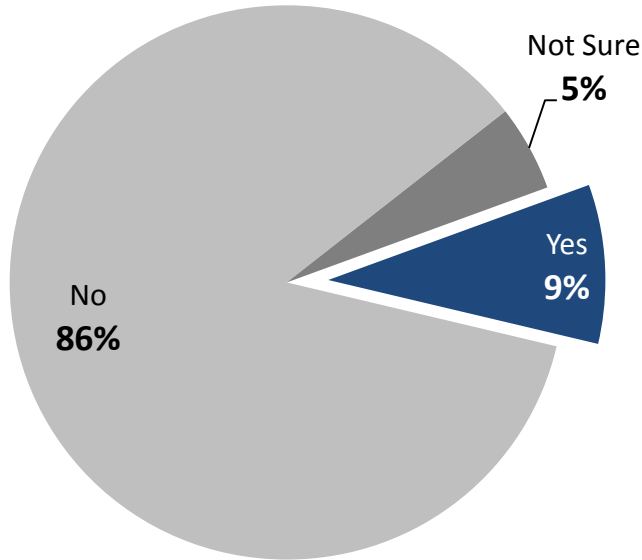
As Expected: More than **75%** of respondents indicated they receive rewards as part of mobile wallet usage; two in five respondents would not have downloaded the app without rewards.

*Includes Panera, Walgreens, and Kohl's, among others.

Less than **one in ten** respondents indicated they have an issuer wallet; Chase and Capital One were the most frequently cited.

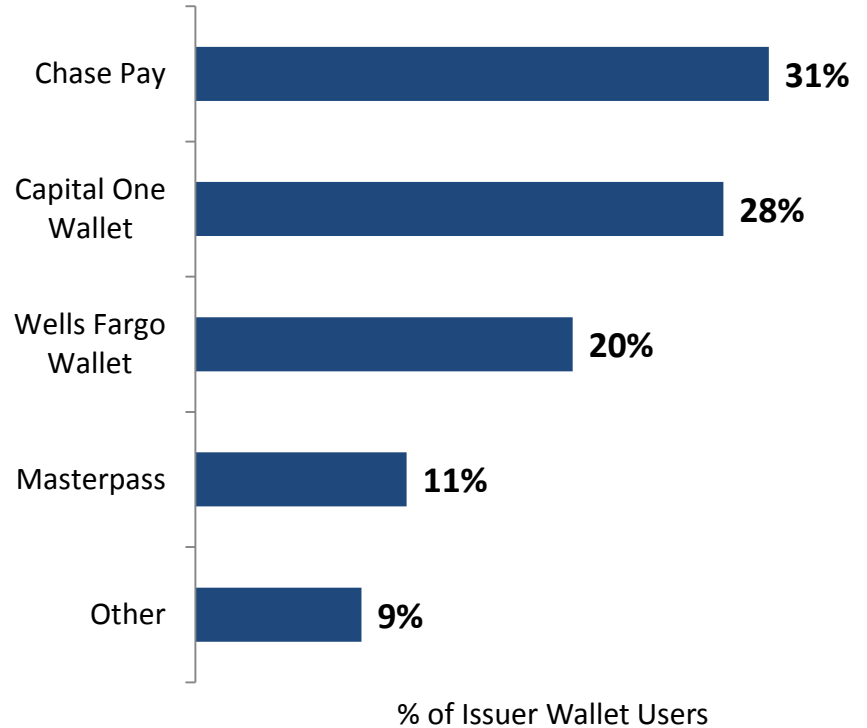
Overall Issuer Wallet Penetration

“Do you currently have an issuer wallet on your phone?”
(N = 1,514)



Issuer Wallet Penetration by App

“Please indicate which of the following issuer wallet apps is your primary app.”
(N = 130)



*Among issuer wallet users, **96%** have loaded a card into the wallet; of those, **90%** have made a purchase using the wallet.*

Most consumers (**65%**) want one payment app on their phone, and most would prefer their bank to be the app provider.

Wallet Preferences

Of those that prefer a single wallet:

“If you were to choose one provider of a mobile wallet app, which would be your preferred provider?”

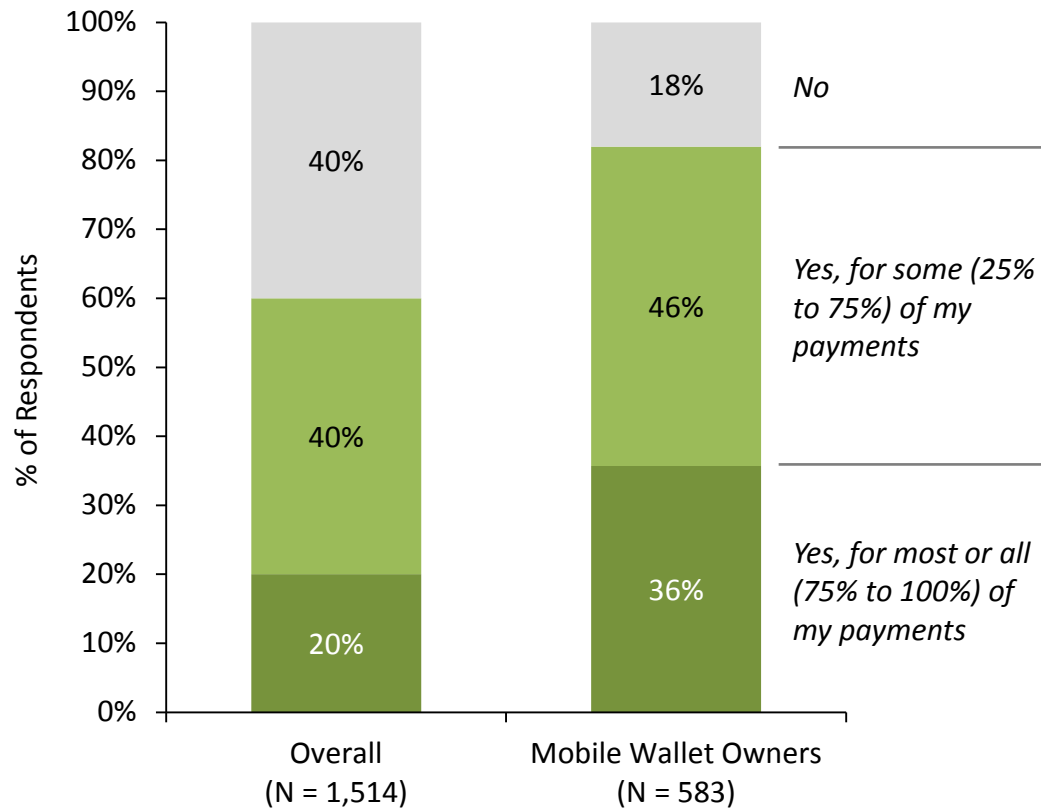
	Existing mobile wallet users (N=281)	Interested non-users (N=396)	Overall (N = 677)
Bank	38%	55%	48%
Card Brand	12%	18%	16%
PayPal	9%	10%	10%
Traditional Providers	59%	83%	74%
Apple	22%	6%	13%
Google	5%	3%	4%
Samsung	5%	2%	3%
Other*	9%	6%	4%
Non-Traditional Providers	41%	17%	26%

As expected: While banks are the preferred provider overall, that preference is most pronounced among those who have not yet adopted a mobile wallet.

20% of respondents say they would use their mobile device for almost all of their payments if they could; among those who have a mobile wallet, that figure increases to **36%**.

Widespread Acceptance

“If all merchants accepted tap-and-pay mobile payments in their stores, would you be motivated to use a mobile wallet at checkout?”



Conclusion

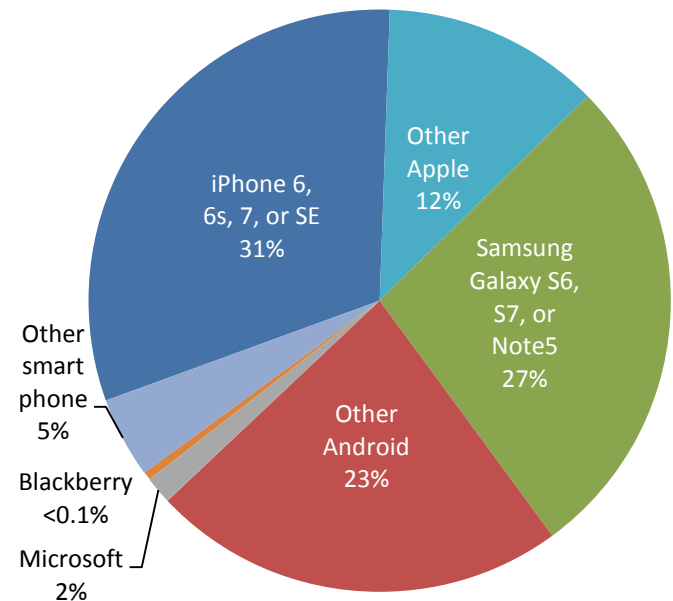
- Consumers are not yet ready to leave home without their physical wallet.
- The user base for current mobile wallet solutions may be stabilizing, at least in the short-term.
- Growth has been/will be slower than anticipated, but mobile wallet payments are poised for growth.
 - Consumer use is increasing and satisfaction levels remain high.
 - EMV migration is increasing merchant acceptance, and accelerated transaction times relative to chip-based POS transactions will likely create a customer experience advantage.
 - Penetration will increase naturally as generations age.
- The Pays have an established user base and expanded acceptance has spurred increased use; further expansions of their acceptance footprint will be critical to long-term success.
- Many consumers are supplementing the Pays or an issuer wallet with individual merchant apps—but most would prefer to have one payment app.
- There is a demand for issuer-provided wallets with ubiquitous acceptance.

Study findings are based on survey responses from 1,514 banked smart phone users in January 2017.

Study Methodology

- The online consumer survey was administered in **January 2017** and designed to explore consumer’s usage and attitudes towards mobile payments and wallets.
 - Consumers’ mobile payments behavior and attitudes
 - Respondents’ ongoing adoption and use of the “Pays”, merchant wallets and issuer wallets
- Findings are based on a sample of **1,514 U.S. consumers** over the age of 18 who meet the following criteria:
 - Own a smart phone; and
 - Have a checking account, debit card, and/or credit card.
- Sample demographics are generally in-line with U.S. census distributions; survey results for the overall sample have a margin of error of **+/- 2.5% at a 95% confidence level**.
- Previous studies on Mobile Banking and Payments were conducted in **June 2016, December 2015, and May 2015** and were based on responses from consumers age 18 to 54; longitudinal comparisons have been age-adjusted.

Device Type
 “Which of the following devices do you own?”
 N = 1,514



78% of respondents have a device that is compatible with Apple Pay, Samsung Pay, and/or Android Pay.

This report focuses primarily on mobile wallet payments; a separate report on mobile banking and payments is planned for Q2.



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