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Hey, everybody.
My name is Max.
I cover fintech and ARC and also co-lead ARC's venture capital effort.
I'm super excited to talk to you about our new research in the era of fintech, more specifically in the era of digital wallets.
You've heard us talk about digital wallets maybe over the past couple of years as well.
We have some new research for Big Ideas 2023 that's a little bit more specific and goes really deep in one area in the space of digital wallets, which is closed loop transactions.
So I'm very excited to talk to you about the potential and opportunity associated with closed loop transactions, which we think could really move the needle, not only for digital wallets, but also for a lot of incumbents.
So with that being said, we can dive right into the deck and start here on the first slide.
And before maybe actually diving into the numbers on the first slide, we can take a moment and zoom out and just mention what we at ARC think of when we talk about digital wallets.
So in short, we think digital wallets are something like a bank branch in your pocket or purse.
They are apps on your phone, on your smartphone that enable you to not only engage with financial products such as a checking account or debit card or an investment product, but also to other kind of non-financial commercial products.
So many digital wallets around the world offer their users access to e-commerce, ride hailing, all kinds of other kind of more generally commercially focused products and services.
And with that being said, as you can see here on the chart, digital wallets really have been gaining a share of payment transactions specifically over the past couple of years.
So starting on the left side here of the slide on the left side chart, you can see that digital wallets now penetrate nearly half of the global e-commerce volume.

That's up from less than 20% just a few years ago in 2016.
You can see that in 2017, there was an inflection point where digital wallets surpassed credit cards as the number one payment transaction method globally, and since then just has been continuously kind of rising.
And you see also there was another kind of tick up in 2020 and 2021 where the COVID pandemic helped digital wallets to kind of penetrate even more of online e-commerce volumes.
You see that kind of that rise around 2017, 2018, that's especially driven by the use of digital wallets in Asia, specifically China with WeChat Pay and Alipay, which we're going to get into later.
But as we'll also get into later, we'll see that the digital wallet phenomenon really is a global one with a lot of exciting companies building huge user bases and also merchant bases all around the globe.
Now on the right side on the right chart, you can see that digital wallets also have been penetrating offline payments.
And you had an inflection point in 2020 and 2021 where digital wallets became the number one payment method of offline transaction as well of point of sale or POS transactions as well.
And like for online transactions, but probably even more than for online transactions, the kind of the rise in the volume and penetration of digital wallets really was helped by the COVID pandemic, where consumer habits shifted from physical to digital.
And although the latest point of data that we have here is 2021, it's worth noting that we did see this increase, especially in offline, but also in the online sphere in 2020.
And then you see a continuous rise in 2021, which we believe is very interesting and important in this context because it suggests that this move that was forced by the COVID pandemic for consumers to shift from physical to digital, from offline to online, there was not just a kind of temporary phenomenon, but it's more of a secular trend because we can see it also holding true until the end of 2021 when around the globe a lot of governments actually eased the restrictions associated with COVID, a lot of them also touching on payments as well.
So with that being said and really the stage being set, we can also dive into here on the next slide a little bit more in the actual numbers around the number of users.
Now starting on the left here, we estimate that in the US, there are roughly 160 million active unique digital wallet users.
That's nearly half of the US population.
And we think that in the US, the kind of three big players in the digital wallet market are Bloch's Cash App, PayPal's Menmo, and you can really also throw Apple's Apple Pay in there.
Cash App and Venmo each have roughly 80 million active users, although there's a fair amount of overlap between the user bases of the two wallets and actually other wallets as well, which is why we present on this slide the number of unique digital wallet users that we estimate.
To put that into perspective, it took JP Morgan roughly 30 years and five acquisitions to reach roughly 65 million deposit accounts, whereas Cash App and Venmo grew to roughly 80 million active users in just around 10 years.

Now it's important to mention here as well that it's kind of looking at the user profile and kind of value and kind of potential or kind of current monetization of these different types of users, the JP Morgan, the average JP Morgan deposit account user today is a little bit more mature, generates more revenue for the bank, but from our perspective, where Cash App and Venmo and others, you can also kind of mention private companies such as Chime here in the US, HM Bradley, a lot of other players in the market.
What they've done really well is build a massive user base through very, very low customer acquisition costs, really in the kind of 10, 20, sometimes up to $50 range.
Cash App actually very low though, $10, $20, whereas traditional incumbents pay a lot, higher acquisition costs and also have kind of legacy branch infrastructure and other things to support that really pushes up these costs.
So although maybe today, the Cash App or Venmo users not as monetized as a JP Morgan user, first of all, there aren't that much costs associated with kind of making them profitable compared to a traditional bank user, but the digital wallets now have this opportunity to really up and cross sell these users into all kinds of different financial products and also other commercial products and really drive that monetization.
And we're seeing this nicely as an example with Block in the US, where it kind of started out with P2P payments, which are free and not being monetized, but then expanded into a debit card, now Cash App Pay, which we'll talk about later, an investment product, a lending product, a buy now, pay later product, they're adding e-commerce on top.
So kind of really building the stack and building on this kind of low customer acquisition costs, really driving that monetization curve.
So that's what's happening in the US from a number of user perspective.
You can also look globally, and here's I think where it's also very exciting, where globally we believe there are more than 3 billion digital wallet users, unique digital wallet users, up roughly 1 billion since 2016.
And we think that over the next couple of years, so in 2030, we think there will be over 5 billion digital wallet users, which will equal roughly 65% of the world's population, we believe, and really the vast majority of adult smartphone users.
So all in all, digital wallets are growing their user bases at a never seen before and rapid pace that's unprecedented in the financial services industry.
What's interesting though, and we're jumping to the next slide here, is that digital wallets have not only kind of signed up and accumulated these with billions of users on the consumer side, so with consumers using them, but they've also created and they've attracted really millions of merchants and created strong merchant user base user bases as well.
And you can see a few examples here, a few examples here on the slide.
You have the Alipay China example with over a billion users on the platform, 80 million merchants, we've talked about Block, Block Formally Square, coming from the merchant side, coming from the business side, has over 7 million merchants, now with the acquisition of Afterpay added a lot more on the online side as well, and then has over 80 million annual active consumers.
Other examples in Japan, you have Peipei, over 50 million consumers, nearly 20 million merchants, you can go into emerging markets as well though.

We feature Caspi, a digital wallet in Kazakhstan here with 12 million users,
actually a large part of the population of Kazakhstan, nearly half a million merchants.
You can also think about other emerging market examples like New Bank in Latin America,
Brazil more specifically, that is building out an e-commerce business as well with all of merchants.
So you have this interesting development where the digital wallets are not only onboarding
these billions, millions and billions of users, but also millions of merchants.
And now the interesting opportunity, you can see this featured here on the right side of the
kind of of the chart here with the iPhone screenshot, is that these digital wallets
have now the opportunity to connect the merchant and the consumer ecosystem and essentially facilitate
transactions between them, offline or online transactions, where no other intermediary is
part of that transaction. And that's really what we're going to dive into now over the next couple
of slides, the opportunity that's associated with creating these so-called closed-loop transactions
where there's a closed loop between the merchant and the consumer, because the digital wallet
interfaces with both the merchant and the consumer and can directly facilitate a transaction
without having to pull in other parties such as card networks or banks or other third parties
into this transaction. So jumping to the next slide, we can dive a little bit deeper
and talk about traditionally how these transactions normally work in an open loop,
in an open-loop setup. Open-loop meaning that there are a number of other parties involved,
especially card networks. So open-loop transactions are normally referred to as the
transactions that run through, especially Visa and MasterCards, but could also be other card
network rails, which kind of integrate with all kinds of businesses, especially around the world.
And you can see here on the left side of the chart that those transactions are pretty complex. So
we picture here nine steps that happen between the transaction of a buyer and a seller,
where a buyer is first interfacing with a payment service provider, that could be,
you know, a FIS or FISA for kind of square off the world or an ad in or a stripe,
that's essentially kind of interfacing with the consumer and the merchant,
who's then sending kind of the consumers or the buyer's payment information to an acquirer,
which could be Chase Payment Tech or another bank owned or third party entity.
That entity is then sending the information, the buyer's information to the card networks.
They're passing it through to the issuer, which is the issuing bank, the consumer's bank, where the
consumer's kind of debit and credit card is linked to an account. That bank then checks kind of with
the consumer or kind of internally, does that person have enough money, you know, on that account,
essentially for this transaction to work. And then the chain kind of goes back
at the issuer, again, kind of transmits information to the card network, the card network to the
acquirer, the acquires to the payments, the PSP, the payment service provider. And if everything
checks out, then that information is transmitted to the seller, and then the transaction is
complete. So a lot of steps here, a lot of parties involved, and with a lot of parties being involved,
also a high cost, because each one of those parties, and in some instances it could even
be more parties than this, each of those parties is taking a cut. And that cut, you've seen this
probably before, that cut is somewhere between two and three percent for most transactions,
especially kind of transactions for SMBs, where businesses have to pay two to three percent,
you know, for debit or credit card transactions. And then it gets even more complicated,
some types of credit or debit cards, you know, charge higher fees than others. But it's really

the networks, the card networks that are setting these fees. Interestingly, the majority of those fees actually go to the issuing bank, so to the consumer's bank, where the card originally came from. But all in all, it's two percent to three percent. Now, what could this process look like in a closed loop transaction? Well, it could look very different. And that's what we're looking at here on the right side of the chart. We're essentially looking at a scenario where the number of parties involved is really cut down to three parties. The consumer, the merchant, and the digital wallet. The digital wallet is interfacing with both the consumer and the merchant directly. So what would happen in this scenario is that the consumer, the buyer, already has funds saved in their digital wallet that they could use to pay for the transaction. So in a kind of a practical context, if you're using a cash up or a Venmo or using Apple Pay, if there's already money in your account, and this also applies to Alipay in China and all kinds of other digital wallets around the world, if there's already money in your account, there's a balance through which you can or from which you can fund the transaction. And the merchant that you're buying, you know, good or service from also is part of the network of the digital wallet. The digital wallet can essentially kind of take that money from your account and send it over to the merchant without any other third party really being involved. Because there's no debit or credit card being involved because you already have money on your account. So there's no reason for the whole circle that we just went through to kind of start with the acquire and the card network and the issuing bank. All those parties are essentially removed from the process. So what's left is like I said, you the buyer, the digital wallet and the seller. There might be some instances where the digital wallet is still using a third party to interface with the seller to kind of broaden their network. But even in that case, if the transaction is not coming from a debit or credit card, but it's coming from the balance in your app, then there's no network involved, no card network involved, no bank, no issuing bank involved. So all in all, what that means is that the costs for such a transaction would be dramatically lower. So we kind of mentioned here on this slide that up to 2.4% can be saved because again, there's no card network, no bank, no acquire being involved that's taking their cut. Now it's important to note that those cost savings might, you know, could go to different parties that are involved. It could go to actually, you know, one of the three parties that we just discussed. So it could go to the buyer, it could go to the digital wallet, or it could go to the seller. And we think it's likely that, you know, different digital wallets will take different approaches here, might, you know, completely, you know, give the, give the savings to the buyer in order to incentivize, you know, that transaction could give it to the seller, you know, to maybe, you know, better compete with other payment, payment offering, payment offerings that are, you know, charging higher fees, that could be an option, or they're taking, you know, more of it for themselves.
And that's what we're going to talk about here on the next slide, where you see a practical example of what could happen if the digital wallet captures, captures, you know, most of those savings. So kind of the merchant really here, or sorry, the digital wallet provider really is at an interesting position here, because the closed loop transaction really could boost the margin structure, right? So we already discussed generally payment processing for credit and debit cards, you know, cost two to three percent.
Now with the closed loop transactions, with the closed loop transaction, where, you know, in that, in that cycle, there's no card network, there's no bank through to which the most of these two to three percent are flowing, the margin structure for the payment service provider

could be a block, could be a stripe, could be others, would be, you know, radically different. You can see this here on the chart where, you know, Square pays 60 percent of the transaction fees that they charge to their merchants to those third parties that we talked about for the interchange fees, assessment fees, the culture networks, processing, bank settlement fees, to pay all the third parties that are involved. A closed loop transaction, although that cuts out all these involved parties, could roughly double the take rate, as you can see on the right side of the chart. Now, again, you know, we want to mention that the cost savings here, you know, might accrue to the digital wallet to, in this example, to block, but it could also accrue to the consumer or the merchant, again, in order to incentivize the adoption of a closed loop payments
method. So, kind of having drawn that picture, kind of talking through the traditional process, the opportunity for a closed loop process and how it could work, what would actually be the impact of closed loop transactions in the current payments ecosystem and for digital wallets in particular. Well, according to our research, roughly 40 percent, 36 percent actually of consumption related payments, both online and offline at point of sale, globally are facilitated by digital wallets, 10 percent of which already today are closed loop. And the majority of those closed loop payments actually happen in China, where this is already happening. And a large portion of the transactions that are happening on the Alipay and WeChat Pay apps, where a consumer
is buying something from a merchant, actually is already funded by the balance that that consumer has already in their WeChat Pay or Alipay accounts. So, because the person already has a balance in their accounts, when they make a transaction, that transaction is funded by the account balance and not by a linked debit card or credit card or link bank account or something like that. So, in China, this is already in many cases a reality where the transactions already are closed loop, or in other words, are balance funded. Now, big picture again, we think in 2030 digital wallets will have double the share of offline and online payments and actually will be responsible for two thirds, not roughly 40 percent, of consumption related payments. And we think that the split between closed loop and open loop will be, you know, roughly half and half. So, 33 percent open loop, 33 percent closed loop. Now, we believe that those closed loop digital wallet transactions will generate nearly 50 billion dollars in cost savings. We've talked about the cost savings and kind of how they come to be over the last couple of slides. That can accrue those 50 billion dollars in cost savings, can accrue to the digital wall platforms, the consumers or the merchants, but either way will truly disintermediate, in our view, the revenue of payment incumbents, such as the credit, such as the card networks with credit debit cards, but also importantly banks that earn fees on the credit and debit transactions, but also other associated fee revenues associated with just with cards generally. So, all in all, digital wallets are growing rapidly. They have assembled billions of consumers and millions of merchants on their platforms. And now they're at a position where they can close the loop and leverage the user bases that they have, many of which are storing, in many cases already, you know, meaningful amounts of money on these apps and close the loop and facilitate direct transactions that are balance funded outside of traditional credit and debit cards between the users and the millions and millions of merchants that they have on their platforms. And through that, we believe that they can generate 50 billion dollars in cost savings over the next eight years, really eating into the revenue pool of old world

incumbents.
So, with that being said, we really thank you for tuning in and listening to this short presentation about the digital wallet section of the Big Ideas for 2023. If you haven't checked out the full presentation, we really encourage you to do so. All the team at ARC has done an amazing job, really kind of displaying and going deeply into different areas of our research. So, you can find the Big Ideas for 2023 report on ARC-invest.com. And you'll kind of easily find the Big Ideas section on there, it's highlighted. So, we'll really encourage you to do that. And always reach out if you have any questions about our fintech research or digital wallet research, always very happy to engage. So, with that being said, thank you so much for listening and talk soon.