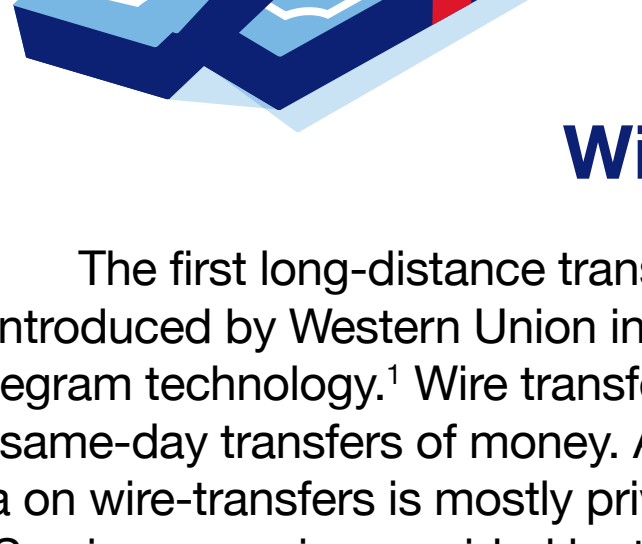


The evolution of banking technology

How did we get to Zelle® and voice banking? Check out the historic milestones that have made banking more convenient for customers over the years.



1871

Wire transfers

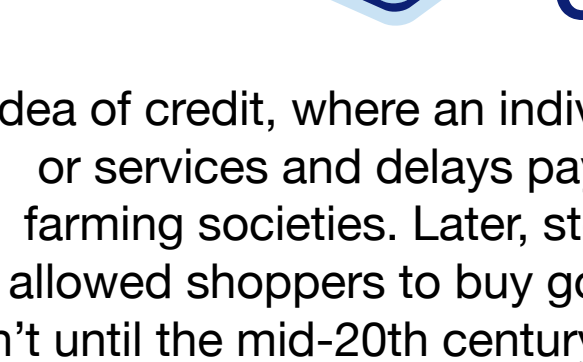
The first long-distance transfers of money were introduced by Western Union in 1871 using existing telegram technology.¹ Wire transfers provide the ease of same-day transfers of money. Although large-scale data on wire-transfers is mostly private, Fedwire Funds Service, a service provided by the Federal Reserve, reported more than 152 million transfers in 2017.²

1910

1910

Routing numbers for personal checks

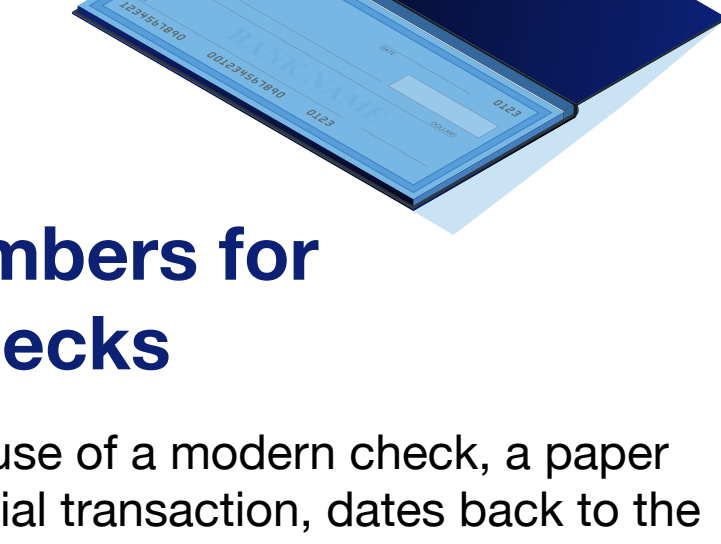
The first recorded use of a modern check, a paper describing a financial transaction, dates back to the 11th century in the present-day Middle East.³ The slips were standardized in 1910 when the American Bankers Association implemented routing numbers, which allowed for universal processing.⁴ In 2000, 42.5 billion transactions were completed using checks.⁵ In 2015, that number was less than half: a still-significant 17.9 billion transactions.⁶



1950

Credit cards

The idea of credit, where an individual uses products or services and delays payment, goes back to farming societies. Later, store-by-store ledgers allowed shoppers to buy goods on credit, but it wasn't until the mid-20th century that physical cards that could be used at multiple shops were introduced. The Diners' Club card launched in 1950, and the first 200 cardholders could eat at 14 New York City restaurants.⁷ Flash forward to 2015 and credit cards were used to pay for 33.9 billion transactions.⁸



1967

ATMs

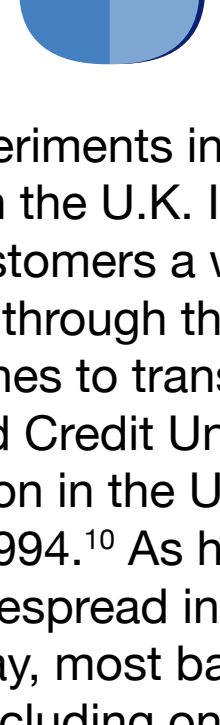
Automated teller technology has evolved since three separate banks introduced it in 1967. Those early ATMs were ill-suited to the elements, and it took decades to refine the technology to connect on a global network.⁸ Even in 1981, an employee had to stand outside of a U.S. Bank in rural Tennessee to persuade customers to try the new technology instead of going into the bank. Over the decades since, the connected ATM network has grown to almost 500,000 in the U.S.⁹



1983

Online banking

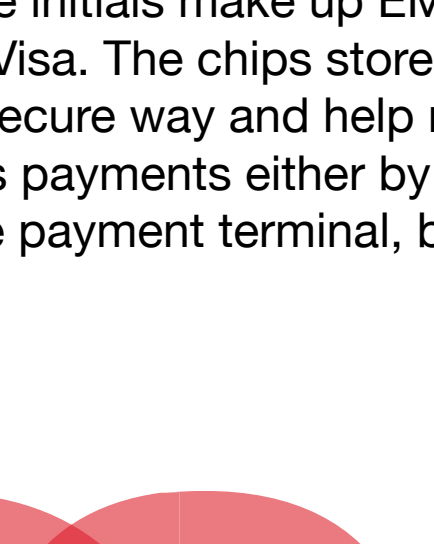
The first experiments in banking through the internet took place in the U.K. In 1983, the Bank of Scotland offered customers a way to bank by connecting to the internet through their televisions and using their telephones to transfer money and pay bills. The Stanford Credit Union became the first financial institution in the U.S. to have an online banking website in 1994.¹⁰ As home internet access became more widespread in the mid-1990s, so did online banking. Today, most bank websites offer a variety of services, including online bill pay, money transfers, account inquiries and the ability to view monthly statements electronically.



1996

EMV chip

As of 2017, there were 855 million cards in the U.S. that use EMV technology — a system that connects a small chip in a credit or debit card to a payment terminal.¹¹ But the actual plan for the technology was developed and published in 1996 by the three companies whose initials make up EMV: Europay, MasterCard and Visa. The chips store confidential information in a secure way and help reduce fraud. They can process payments either by contact or, depending on the payment terminal, by waving the card above it.¹²



2007

Mobile banking

The launch of smartphones, starting with Apple's iPhone® in 2007,¹³ brought mobile banking into apps, although text messaging had allowed for limited banking services since cellphones arrived decades earlier. Today's mobile banking apps allow you to check account balances, view transaction history, make transfers and pay bills. Also, by enabling location services on your smartphone for the U.S. Bank Mobile App, you can increase security and lower your risk of fraud by allowing U.S. Bank to verify that your mobile phone is with your favorite mobile app. Many mobile banking apps also use facial recognition or touch identification for enhanced security.



2010s

Mobile and peer-to-peer payments

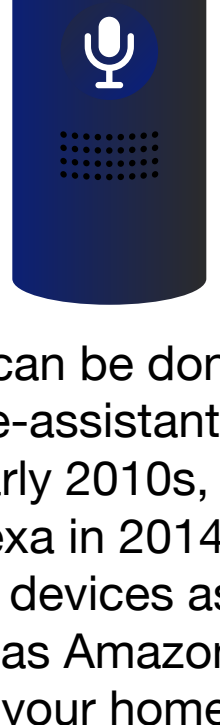
Technology such as Apple Pay and Google Pay allows users to purchase goods in stores by simply tapping or scanning their smartphones. Those services also allow for peer-to-peer, or P2P, payments where users can send money directly to other users. One service, Zelle®, which launched in 2017, is readily available through more than 100 banks¹⁴ and will have an estimated 27.4 million users in the U.S. by the end of 2018.¹⁵ Unlike some other types of P2P transfers, Zelle transfers money directly from one bank account to another — so secure transactions between enrolled users can take place almost instantaneously.¹⁶



2010s

Voice banking

Today, banking can be done by simply talking. Some of the first voice-assistant technology was launched in the early 2010s, with Apple's Siri in 2011,¹⁷ Amazon's Alexa in 2014¹⁸ and Google Assistant in 2016.¹⁹ The devices associated with these voice assistants, such as Amazon Echo and Google Home, help automate your home, keep your daily calendar up to date and play your favorite music. Now, depending on which device you're using, you can check your U.S. Bank balances, billing due dates, transaction history and even pay your credit card bill.



¹ "Western Union Celebrates 160 Years of Innovation," Western Union, May 2011.

² "Fedwire Funds Service—Annual," Board of Governors of the Federal Reserve System, accessed November 2018.

³ "The Evolution of the Check as a Means of Payment: A Historical Survey," Economic Review, December 2007.

⁴ "ABA Routing Numbers," American Bankers Association, accessed November 2018.

⁵ "The Use of Checks and Other Noncash Payment Instruments in the United States," Federal Reserve Bulletin, August 2002.

⁶ "The Federal Reserve Payments Study: 2017 Annual Supplement," Federal Reserve System, December 2017.

⁷ "Now You Know: What Was the First Credit Card?" Time, October 2016.

⁸ "A Brief History of the ATM," The Atlantic, March 2015.

⁹ "U.S. ATM Count Hits Half-Million Mark," Credit Union Times, August 2017.

¹⁰ "Infographic: The History Of Internet Banking (1983 – 2012)," The Financial Brand, October 2012.

¹¹ "What Is an EMV Chip?" Experian, April 2018.

¹² "A Guide to EMV Chip Technology," EMVCo, November 2014.

¹³ "Apple Reinvents the Phone with iPhone," Apple, January 2007.

¹⁴ "Innovation. Powered by Partnerships," Zelle, accessed November 2018.

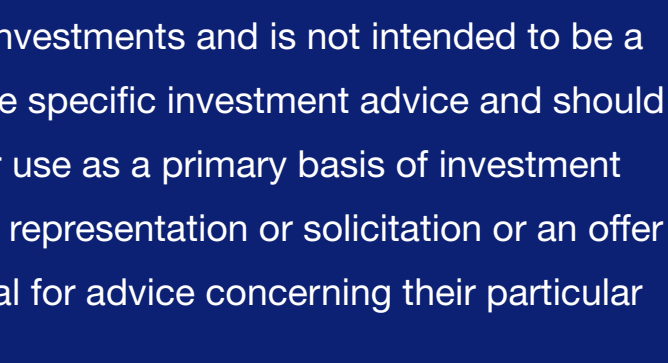
¹⁵ "Zelle Will Overtake Venmo in 2018," eMarketer, June 2018.

¹⁶ "See how Zelle works," Zelle, accessed November 2018.

¹⁷ "Apple Launches iPhone 4S, iOS 5 & iCloud," Apple, October 2011.

¹⁸ "Forget Siri, Amazon now brings you Alexa," Fortune, November 2014.

¹⁹ "Google's Amazon Echo Rival Launches in November," Time, October 2016.



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*Transactions typically occur in minutes when the recipient's email address or U.S. mobile number is already enrolled with Zelle. Recipients must have an eligible bank account in the United States. Terms and conditions apply.

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