

# ATM Banking

**H**ERE IS A RIDDLE for you. To this machine, you can walk or drive; it is a source of paper used to survive. What is it? The answer is an automated teller machine or ATM. When you are hungry and need cash, an ATM is great to have around. This lesson will explain the basics of ATM banking.



## Objective:



Explain ATM banking.

## Key Terms:



automated teller machine (ATM)  
biometrics  
card reader

cash slot  
deposit slot  
display screen  
keypad

personal identification number (PIN)  
receipt printer  
screen buttons

## Automated Teller Machines

Automated teller machines are all about convenience. Businessdictionary.com defines an **automated teller machine (ATM)** as a “computerized machine that permits bank customers to gain access to their accounts with a magnetically encoded plastic card and a code number.” It allows customers to perform several banking operations without the help of a teller. Those duties include withdrawing cash, making deposits, paying bills, and obtaining bank statements.

## HISTORY OF THE ATM

ATM technology dates back to 1960, when First National City Bank (now Citibank) began using a “bankograph” in lobbies. The concept of this first machine was for customers to pay utility bills and get a receipt without a teller. In 1967, the first cash-dispensing machine

appeared in a London bank. The machine converted paper vouchers bought from bank tellers in advance into cash for the customer.

The first use of magnetically encoded plastic was in a Docuteller machine at New York's Chemical Bank in 1969. Docutel met initial resistance from bankers because the machine cost \$8,000 more per year than using a human teller. In addition, banks thought customers would be reluctant to use a machine to manage cash.

In 1971, Docutel released its "Total Teller," the first true full-function bank ATM. By 1973, there were 2,000 ATMs operating in the U.S. In 1974, ATMs were connection by telephone lines to banks. Telecommunication between ATM and bank is the current ATM networking model. In 2011, there are 1.8 million ATMs throughout the world.

## PARTS OF AN ATM

The façade of an ATM contains basic parts for completing a transaction: card reader, keypad, display screen, screen buttons, receipt printer, cash slot, deposit slot, and speaker. There are key internal parts as well, such as the central procession unit and cash vaults. Following is a description of ATM parts.

### External Parts

The **card reader** is the slot into which the customer's personal debit/ATM card is placed. It is a requirement for using the ATM. The card has an electromagnetic stripe encoded with the customer's PIN. The **personal identification number (PIN)** is the (usually four-digit) security code paired with the ATM plastic card. The customer must enter their PIN after inserting the debit/ATM card for the ATM to work. The **keypad** is a ten-digit collection of numerical buttons where the customer enters the PIN and other information like the amount of money involved in the transaction.

The **display screen** is the area that shows customer information and is a visual guide for using the ATM. **Screen buttons** provide choices for the customer to select on the display screen while completing the transaction. For example, a choice of which bank account to select will appear next to the screen buttons for the customer to push.

The **receipt printer** prints out written documentation for the transaction at the end and can include information such as the customer's account balance. The **cash slot** is where cash is dispersed to the customer if a withdrawal is made. The **deposit slot** is where the customer feeds envelope into the ATM when making a deposit.



FIGURE 1. Automated teller machine.

Speakers are available for people with visual impairment using an ATM. Keypad and screen buttons contain Braille for people with visual impairments.

## Internal Parts

The CPU (central processing unit) is the computer stored inside the ATM that is connected/networked using telephone and Internet wiring running beneath the ATM and ground. The CPU communicates with the customer's bank for account information during the transaction. Vault and cash portals are secured within the ATM and store cash and deposits and mechanically move the money out when customer makes a withdrawal.

## High Tech Security Features

ATM fraud occurs when cards and PINs are stolen. **Biometrics** is technology for scanning a customer's fingerprint or eye to establish identity rather than using a pin number. Biometrics improves the ATM security since fingerprints and eyes are impossible to steal from the customer.

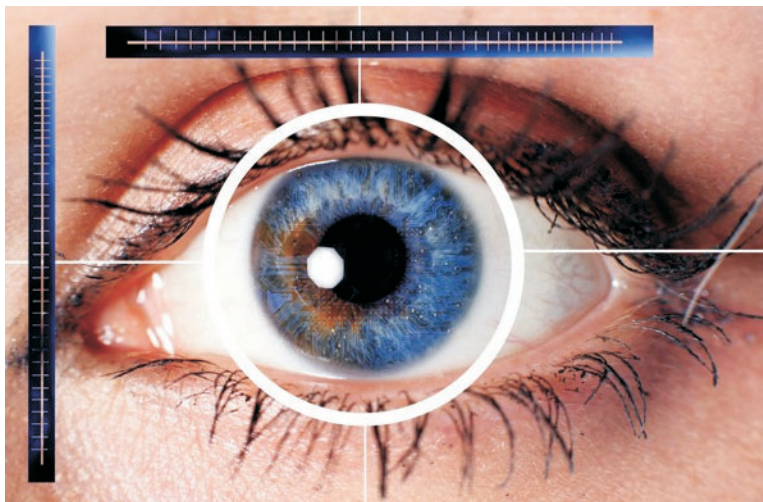


FIGURE 2. Biometrics.

## TRANSACTIONS

ATMs complete the following transactions: cash withdrawal from checking or savings account, deposit into checking or savings account, balance inquiry, and transfer. Debit cards are a part of the automated teller machine system and can be used to make purchases at most businesses.



## FURTHER EXPLORATION...

### ONLINE CONNECTION: How an ATM Works

How can an ATM tell the difference between a one-dollar bill and a 100-dollar bill? What happens if two bills are stuck together? ATMs contain specialized technology for telling what bills are coming into the machine and leaving the machine. ATMs also have a special internal bin for bills that are stuck together or worn. Visit the following website to explore more about how ATMs work. You will read about the “electric eye” and “reject bin.”

<http://money.howstuffworks.com/personal-finance/banking/atm.htm>.

The ATM card is inserted, PIN entered, and the customer selects the type of transaction from a menu. Withdrawal is taking cash out of an account through the ATM. Deposit is placing check or cash into an account through the ATM. Balance inquiry is discovering how much money is available in checking or savings accounts. Transfer is moving money from one account to another.

## Debit Cards

Debit card purchases are part of the automated teller machine system. Customers can use their bank account funds without having a teller present and after the bank has closed. A business that accepts credit cards will also accept debit cards. Debit cards are connected directly to the customer's checking account.

A customer can make a purchase using a debit card instead of using cash or check. The customer slides the debit card at the place of business and the banking system debits the amount of purchase from the customer's account and creates documentation of the transaction with the bank.



FIGURE 3. Using debit card for purchase.

## International Use of ATMs

International use of ATMs helps people access cash when traveling in other countries. Some research must be done to ensure there are ATMs available at the destination and that the PIN numbers are configured to work in those machines. Currency exchange rate is determined by the system. There is an international fee charged for using ATMs abroad.

## Summary:



ATMs first appeared in 1960 and currently there are nearly 2 million machines around the world. ATMs let customers manage money more conveniently. An ATM contains basic external parts: card reader, keypad, display screen, screen buttons, receipt printer, cash slot, deposit slot, and speaker. Key internal parts include the central procession unit and cash vaults. Biometrics is a high tech security feature on some ATMs that scans the customer's eye or fingerprint instead of using a PIN.

ATM cards often act as debit cards too. ATM/debit cards complete the following transactions: cash withdrawal, deposit into checking or savings account, balance inquiry, transferring money between accounts, and making purchases at most busi-



nesses. ATM cards can be used in other countries also. Some homework should be done before travelling abroad to make sure the card will work at the destined location.

## Checking Your Knowledge:



1. Why are ATMs valuable to banks and customers?
2. What are three external parts of an ATM?
3. What are two internal parts of an ATM?
4. What are two examples of security features of an ATM card?
5. What are three transactions a customer can complete with an ATM card?

## Expanding Your Knowledge:



The use of biometrics is an upgrade in security technology for ATMs. Expand your knowledge in the area of biometrics. Research the pros and cons of using biometric technology in ATMs. Explore reasons why the technology may be slow to catch on in mainstream ATMs. Explore which ATM manufacturers are using biometrics, where the technology is being used most and why.

## Web Links:



### 10 Things You Can Do at an ATM besides Draw Cash

<http://money.howstuffworks.com/personal-finance/banking/10-things-you-can-do-at-atm.htm>

### ATMs Abroad

<http://www.independenttraveler.com/resources/article.cfm?AID=41&category=8>

### Biometric ATMs coming to India

<http://www.engadget.com/2007/01/21/biometric-atms-coming-to-rural-india>