SOS POLITICAL SCIENCE AND PUBLIC ADMINISTRATION
JIWAJI UNIVERSITY, GWALIOR

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SUBJECT NAME: E-BUSINESS AND CYBER LAW

TOPIC : ATM (AUTOMATED TELLER MACHINE)


ATM

What is an ATM ??

An **automated teller machine** (**ATM**) is a computerized telecommunications device that provides the customers of a financial institution / bank with access to financial transactions in a public space without the need for a human clerk or bank teller round the clock (24 hrs a day)

Introduction

- machine at a bank branch or other location which enables a customer to perform basic banking activities (checking ones balance, withdrawing or transferring funds) even when the bank is closed.
- This machine also allows to check their account at any time and without the need for a human teller.
- suppose You're short on cash, so you walk over to the automated teller machine (ATM), insert your card into the card reader, respond to the prompts on the screen, and within a minute you walk away with your money and a receipt in a few minutes.
- Now a days it is widely used in all fields such as defence and many others.

HISTORY

- Alex Robertson has been credited with developing and building the first automatic teller machine in USA.
- The first ATM called Bankograph was installed in Barkley bank in north London on 27th June 1967.
- After that it was later countries like Japan , Sweden , U.k credited in developing first cash machine.

History Of ATM

- The ATM was invented by Scot John Shepherd-Barron.
- The world's first ATM was installed in a branch of Barclays in the northern London borough of Enfield, Middlesex, in 1967.
- A mechanical cash dispenser was developed and built by Luther George Simjian and installed in 1939 in New York City by the City Bank of New York
- The first person to use the machine was Reg Varney of "On the Buses" fame, a British Television programme from the 1960s
- The idea of a PIN stored on the card was developed by the British engineer John Rose in 1965.
- the modern, networked ATM was invented in Dallas, Texas, by Don Wetzel in 1968
- Notable historical models of ATMs include the IBM 3624 and 473x series, Diebold 10xx and TABS 9000 series, and NCR 5xxx series.

HISTORY OF ATM

- The first Automated Teller Machine (ATM) was introduced in the year 1967 by Barclays Bank in Enfield Town in North London.
- The main objective of introducing the ATM was reducing customer's time, lesser bank distribution cost and enhancing the efficiency of banking institutes.
- The first person to use the machine was Reg Varney of "On the Buses" fame, a British Television programme from the 1960s
- The idea of a PIN stored on the card was developed by the British engineer John Rose in 1965.

The First ATM Machine

Reg Varney using the first ATM in 1967

ATM CARD

- It is a plastic ATM card with a magnetic strip.
- It contains a unique card number and identity information.
- It is also known as cash cards, bank card, client card, key card.
- This card issued by bank.

ATM Card

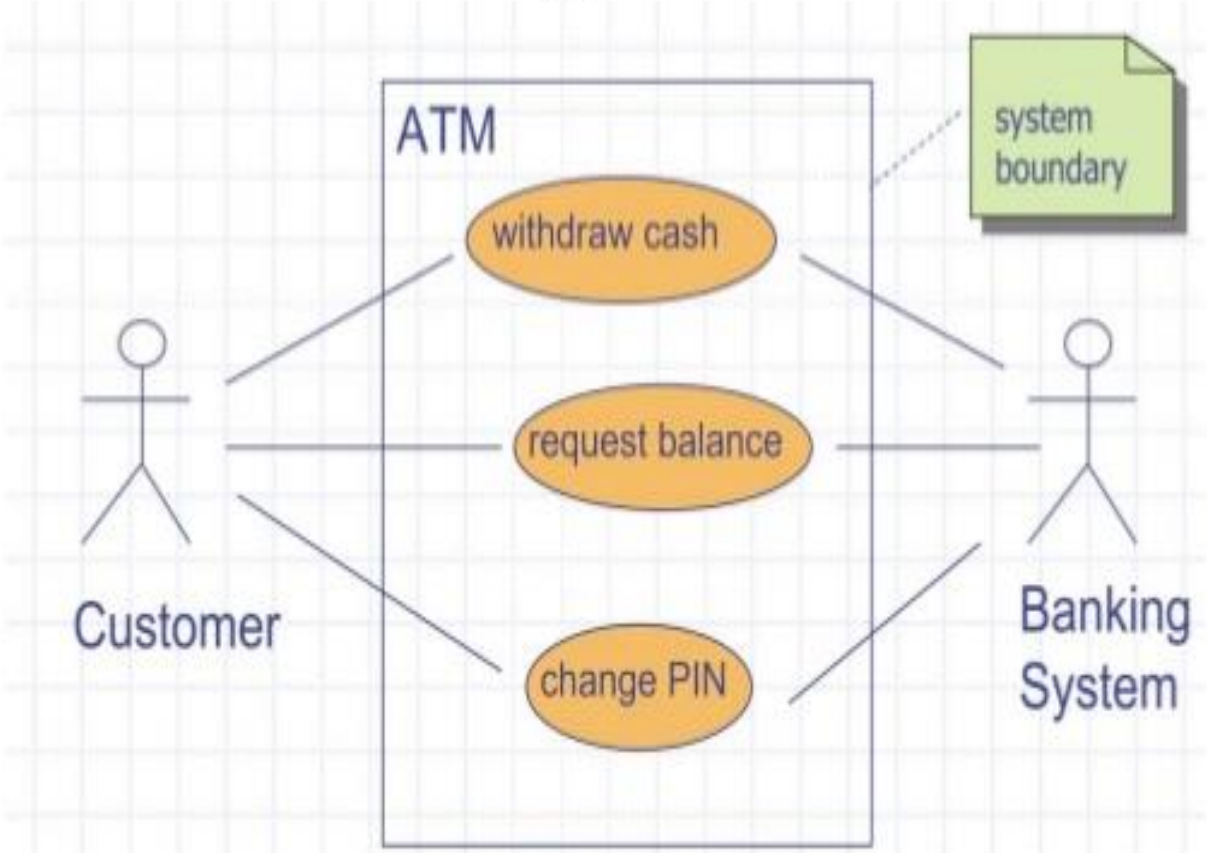
- On most modern ATMs, the customer is identified by inserting a plastic ATM card with a magnetic stripe or a plastic smartcard with a chip, that contains a unique card number and some security information.

- Security is provided by the customer entering a **personal identification number (PIN).**

Functions of ATM

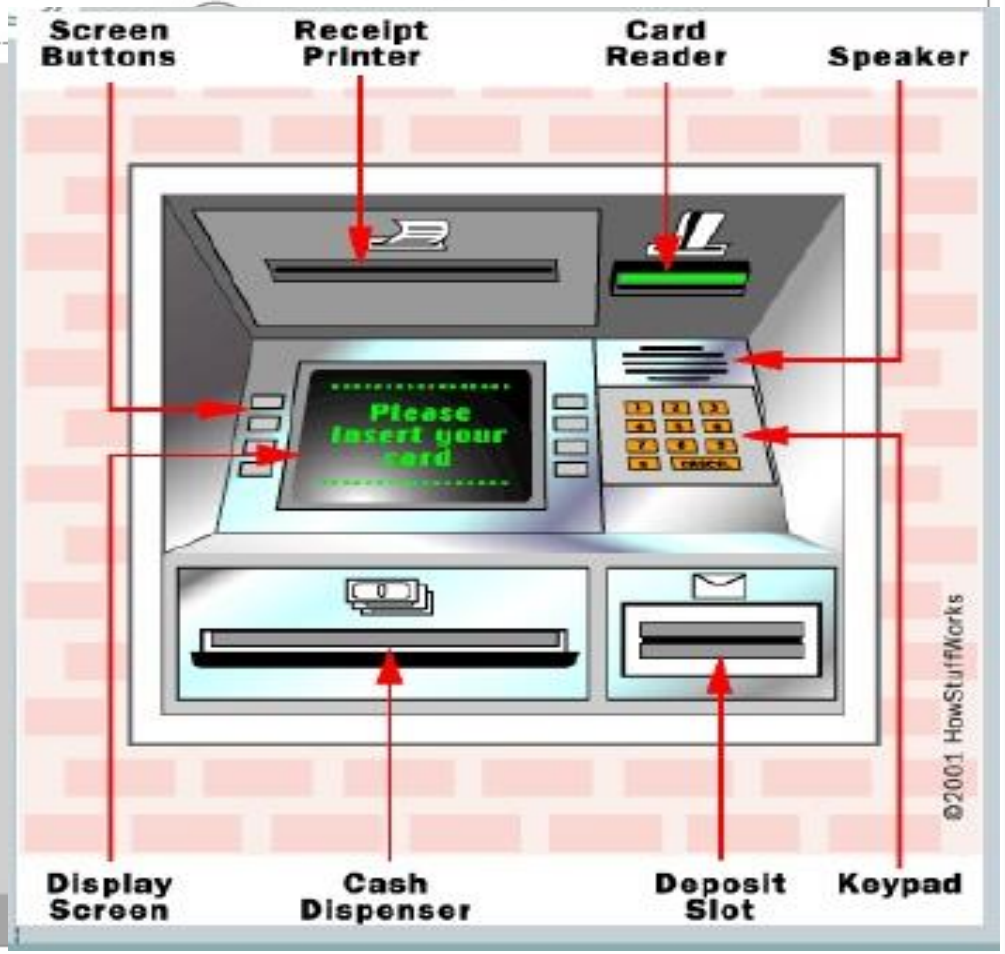
- 24-hour access to cash
- View Account Balances & Mini-statements
- Order a Cheque Book / Account Statement
- Transfer Funds between accounts
- Refill your Prepaid card
- Pay your utility bills
- Deposit cash or cheques
- Change your PIN
- Learn about other products

How does it come together?



Structure of ATM

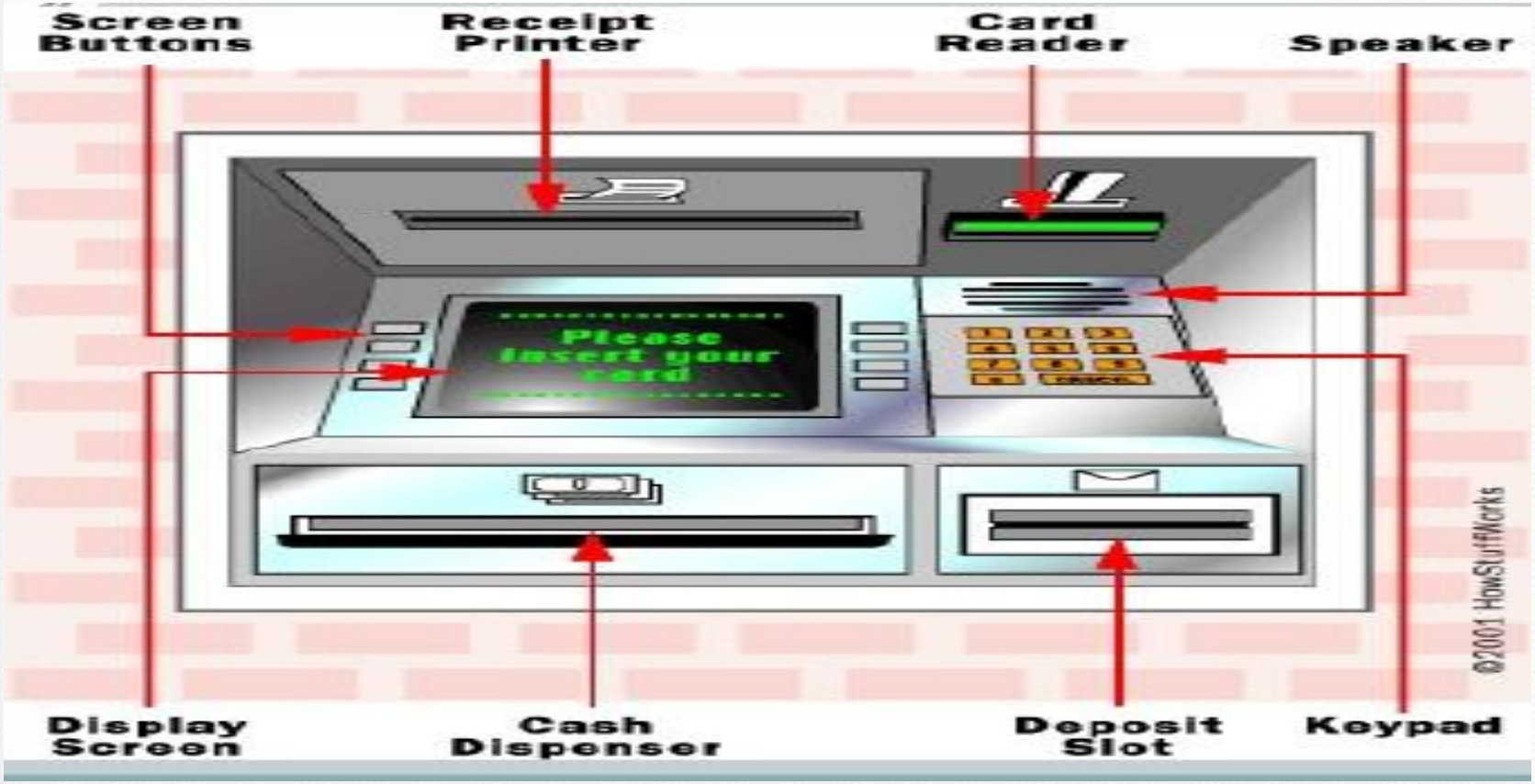
- Card reader
- Keypad
- Speaker
- Display screen
- Receipt printer
- Cash dispenser



COMPONENTS OF ATM

Parts of the Machine

You're probably one of the millions who has used an ATM. As you know, an ATM has two input devices:



CARD READER

- If there will be no card reader, then ATM card can not be read so no transaction can be done by machine.
- ATM card is required to swipe through this card reader slot.□ After swiping card it captures the account information through magnetic stripe of ATM.
- After retrieving the correct information of your account, card reader send this information to the host processor for further process.

Card reader

The card reader captures the account information stored on the magnetic stripe on the back of an ATM/debit or credit card. The host processor uses this information to route the transaction to the cardholder's bank.

HOST PROCESSOR

- Host processor is the heart of ATM machine.
- It contacts the bank server and retrieves your account details such as available balance, previous transactions, PIN etc
- It verifies your PIN number and if it matches with the provided PIN number from the bank server, you are allowed to make the transaction.
- To take your PIN and other requests form user, there will be a keypad or touch pad.

KEYPAD/TOUCHPAD

- Key pad or touch pad is responsible for taking input from the user.
- On this pad, numbers and few other keys such as Clear, OK etc., will be placed.
- Key pad transfers your inputted data to host controller to process the request.

Keypad

- The **keypad** lets the cardholder tell the bank what kind of transaction is required (cash withdrawal, balance inquiry, etc.) and for what amount.
- Also, the bank requires the cardholder's personal identification number (**PIN**) for verification. Federal law requires that the PIN block be sent to the host processor in encrypted form.

SPEAKER

- Speaker is placed in ATM machine which is responsible for audio alerts.
- When you press any key, this speaker confirm the pressing of key by producing a beep sound alert.
- It assures you that the key pad is working.

CRT OR LCD SCREEN

- Another major integral part of the ATM machine is its Cathode Ray Tube (CRT) or Liquid Crystal Diode (LCD) screen.
- CRT or LCD screen is responsible for visual display of your transactions.
- It is responsible for displaying your name, entered amount, account number etc.
- Without CRT or LCD display screen, the transactions from ATM machine would have become more difficult.

Display screen

- The display screen prompts the cardholder through each step of the transaction process.
- Leased-line machines commonly use a monochrome or colour CRT (cathode ray tube) display. Dial-up machines commonly use a monochrome or colour LCD.

Receipt printer

- Receipt printer is responsible for the printing of your transactions receipt.
- It will print whether the transaction is successful or not.
- It contains the important information in the form of fixed codes by which we can assess the transaction status and its reason of failure.
- SO receipt printer is a vital part of automated teller machine.

Receipt printer

- The receipt printer provides the cardholder with a paper receipt of the transaction

CASH DISPENSER

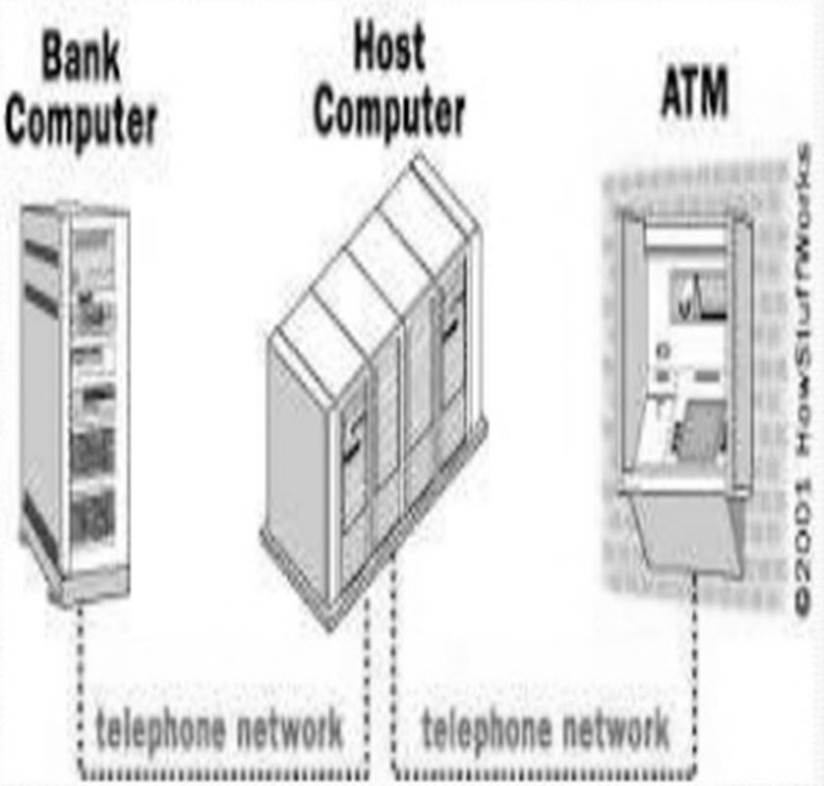
- The most important part of automated teller machine is its cash dispenser.
- The cash dispenser is responsible for giving out the correct amount of cash you have requested for.
- So after getting instruction from host controller to pay the money, cash dispenser will count the money and dispenses the money out of it.

Cash dispenser

- The heart of an ATM is the safe and cash-dispensing mechanism. The entire bottom portion of most small ATMs is a safe that contains the cash.

Working

- An ATM is simply a data terminal with two input and four output devices. Like any other data terminal, the ATM has to connect to, and communicate through, a host processor.
- The host processor is analogous to an Internet service provider (ISP) in that it is the gateway through which all the various ATM networks become available to the cardholder (the person wanting the cash).
- Most host processors can support either leased-line or dial-up machines. Leased line machines connect directly to the host processor through a four-wire, point-topoint dedicated telephone line



How Do ATMs Work?

- An ATM is simply a **data terminal** with two input and four output devices. Like any other data terminal, the ATM has to connect to, and communicate through, a **host processor**

Cont…

- **Leased-line** machines connect directly to the host processor through a four-wire, point-to-point, dedicated telephone line.

- **Dial-up** ATMs connect to the host processor through a normal phone line using a modem and a toll-free number, or through an Internet service provider using a local access number dialed by modem.

LOCATION OF ATM

- ATMs are placed not only near or inside the premises of banks, but also in locations such as shopping centers/malls, airports, grocery stores, petrol/gas stations, restaurants, or any place large numbers of people may gather.

Types of ATMs

- Onl-Line Atms
- Off -line Atms
- On- site ATMs
- Off-Site Atms
- Mobile Atms
- Biometric ATMs
- Talking Atms
- ATMs For Blinds
- Drive In Atms

Examples Of ATMs

Mobile ATM

Drive in ATM

On-site ATM

Off-Site ATM

ATM for Blinds

ATM for Blinds

- There are ATMs that are accessible to blind and visually impaired people. These machines are located at kiosks rather than bank drive-thrus. And the keypads at ATMs are equipped with **Braille**.

Biometric ATM

ADVANTAGES v/s DISADVANTAGE

- You can withdraw cash at any time, day or night. The banks don't need to be open.
- ATMs offer the convenience of multiple locations. You can withdraw cash at any bank that is part of the system to which your ATM card is linked.
- Your ATM card is protected by a PIN, keeping your money safe.
- You don't need to fill out withdrawal and deposit slips as is required at the bank.
- ATMs are faster than going to the bank—no long lines.
- You can withdraw cash at ATMs in foreign countries.

- ATM may be off-line (system down).
- You may forget your PIN number.
- Risk of robbery when you leave the ATM.
- The ATM can break down or run out of cash.
- Fees charged to use ATMs of other banks can become expensive.

security

- Modern ATM physical security concentrates on denying the use of the money inside the machine to a thief, by means of techniques such as dye markers and smoke canisters. This change in emphasis has meant that ATMs are now frequently found free-standing in places like shops, rather than mounted into walls.
- ATM transactions are usually encrypted with DES but most transaction processors will require the use of the more secure Triple DES by 2005.
- But still a number of complaint s of frauds is coming which will be soon get solved.

GLOSSARY

- The Data Encryption Standard (DES) is a cipher (a method for encrypting information) selected as an official standard for the United States in 1976, though it subsequently enjoyed widespread use internationally.
- The algorithm was initially controversial, with classified design elements, suspicions about a National Security Agency (NSA) backdoor and a relatively short key length. DES consequently became the most intensely studied block cipher ever, and motivated the modern understanding of the subject.
- The cipher has since been superseded by the Advanced Encryption Standard (AES).

Guideline related to fraud prevention

- If you do not feel safe at any time, press the ATM cancel button, remove your card and leave the area immediately.
- Minimize your time at the ATM.
- Make smart deposits.
- Avoid using ATMs at night.
- Be aware of your surroundings.

Precautions while using ATM / ATM Cards

- Don't write down your PIN. If you must write it down, do not store it in your wallet or purse.
- Make your PIN a series of letters or numbers that you can easily remember, but that cannot easily be associated with you personally.
- Avoid using birth dates, initials, house numbers or your phone number.
- Store your ATM card in your purse or wallet, in an area where it won't get scratched or bent.
- Get your card out BEFORE you approach the ATM. You'll be more vulnerable to attack if you're standing in front of the ATM, fumbling through your wallet for your card.
- Stand directly in front of the ATM keypad when typing in your PIN. This prevents anyone waiting to use the machine from seeing your personal information.

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- After your transaction, take your receipt, card and money away. Do not stand in front of the machine and count your money.
- If you are using a drive-up ATM, get your vehicle as close to the machine as possible to prevent anyone from coming up to your window. Also make sure that your doors are locked before you drive up to the machine.
- Do not leave your car running while using a walk-up ATM. Take your keys with you and lock the doors before your transaction.
- If someone or something makes you uncomfortable, cancel your transaction and leave the machine immediately. Follow up with your bank to make sure the transaction was cancelled and alert the bank to any suspicious people.


THANK YOU