**// to decide: level, primary, secondary actors**

**Use case name:** Withdrawal and deposit using ATM/ADWM machine.

**Description:** This use case describes how a customer can withdraw money from an ATM and also withdraw/deposit cash using Automated deposit cum Withdrawal Machine (ADWM).

**Actors:**

1. Any bank customer
2. End Banking system
3. ATM machine
4. Automated deposit cum Withdrawal Machine (ADWM)

**Trigger:**

Customer approaching the ATM or ADWM machines in order to deposit or withdraw money as per requirement.

**Pre-Conditions:**

* ATM/ADWM should be operational.
* The bank customer should have a card to insert into the machine.
* The system must have at least some cash that can be dispensed in case of withdrawal by the customer.
* The network connection to the Bank System must be active.

**Flow:**

**Basic flow:**

In case of withdrawal of cash from ATM or ADWM machine:

1. The customer enters their card into the ATM.
2. The ATM/ADWM verifies that the card is a valid bank card.
3. The ATM/ADWM requests a 4-digit PIN code.
4. The customer enters their PIN code.
5. The ATM/ADWM validates the bank card against the PIN code.
6. The ATM/ADWM presents service options including “Withdraw”.
7. The customer chooses “Withdraw”.
8. The ATM/ADWM presents options for amounts.
9. The customer selects an amount or enters an amount.
10. The ATM/ADWM verifies that it has enough cash in its hopper.
11. The ATM/ADWM verifies that the customer is below withdraw limits.
12. The ATM/ADWM verifies sufficient funds in the customer’s bank account.
13. The ATM/ADWM debits the customer’s bank account.
14. The ATM/ADWM returns the customer’s bank card.
15. The customer takes their bank card.
16. The ATM/ADWM issues the customer’s cash.
17. The customer takes their cash

In case of deposit of cash into Automated deposit cum Withdrawal Machine (ADWM):

1. Identify Customer

The Bank Customer’s identity is verified as described in the included use case Identify Customer.

1. Select Deposit Funds

The ADWM displays the different alternatives that are available on this unit. The Bank Customer selects “Deposit Funds”.

1. Enter Account and Amount

The ADWM asks for account to deposit into and amount to deposit. The Bank Customer enters account and amount.

1. Deposit Money

The ADWM asks the Bank Customer to put all bills in an envelope and insert it in the safety 'insert box'. The Bank Customer puts bills or a check in an envelope and inserts it in the deposit input. When the envelope is stored in the safety box the ADWM prints the transaction id on the envelope.

1. Credit Bank Account

The ADWM sends the card id, PIN, amount and account to the Bank Consortium. The Bank Consortium replies that the deposit is accepted. The ADWM system notifies the Cashier that there is an accepted deposit in the ADWM safety box.

1. Print Receipt

The ADWM system prints the receipt.

1. Receive Card

The ADWM system returns the Bank Card to the Bank Customer.

1. The use case ends.

**Alternate flow:**

In case of withdrawal of cash from ATM/ADWM machine:

2a Invalid card

1. The ATM/ADWM indicates that it is the wrong type of card.
2. The ATM/ADWM asks the customer to insert another card.
3. Rejoin the basic flow at step 2.

2b Card upside down

1. The ATM/ADWM indicates that the card is upside down.
2. The ATM/ADWM asks the customer to insert the card again.
3. Rejoin the basic flow at step 2.

5a PIN invalid

1. The ATM/ADWM indicates that the wrong PIN has be entered.
2. If permitted number of tries is not exceeded, the ATM asks the customer to enter their PIN again and rejoins the basic flow at step 4.
3. If permitted number of tries is exceeded, the ATM retains the card and ends the use case.

10a Insufficient cash in the hopper

1. The ATM/ADWM explains the limit on cash.
2. The ATM/ADWM asks the customer to enter a smaller amount.
3. Rejoin the basic flow at step 9.

10b Wrong denomination of cash in the hopper

1. The ATM/ADWM explains the restriction on denomination.
2. The ATM/ADWM asks the customer to enter a different amount.
3. Rejoin the basic flow at step 9.

11a Withdrawal above withdraw limits

1. The ATM/ADWM explains the withdrawal limit.
2. The ATM/ADWM asks the customer to enter a smaller amount.
3. Rejoin the basic flow at step 9.

12a Insufficient funds in customer’s bank account

1. The ATM/ADWM explains the restriction on funds in bank account.
2. The ATM/ADWM asks the customer to enter a smaller amount.
3. Rejoin the basic flow at step 9.

14a Bank card stuck in machine

1. The ATM/ADWM explains the machine malfunction.
2. The ATM/ADWM asks the customer to speak to bank staff.
3. End use case.

15a Customer fails to take their bank card

1. The ATM/ADWM prompts the customer to take their card.
2. The ATM/ADWM waits for a period of time.
3. If card is not removed, the ATM/ADWM retains the card.
4. End use case

16a Cash stuck in machine

1. The ATM/ADWM explains the machine malfunction.
2. The ATM/ADWM asks the customer to speak to bank staff.
3. End use case

17a Customer fails to take their cash

1. The ATM/ADWM prompts the customer to take their cash.
2. The ATM/ADWM waits for a period of time.
3. If cash is not removed, the ATM retains the cash.
4. End use case

In case of deposit of cash into Automated deposit cum Withdrawal Machine (ADWM):

4a No envelope is inserted:

The time out is 1 minute; if there is no envelope after that time then a warning signal will sound, and a new message requiring an envelope is displayed. If there still is no envelope, the transaction is terminated. The machine keeps the card and notifies the Bank Customer. The use case ends.

4b Two or more envelopes are inserted:

If the Bank Customer inserts several envelopes the ATM can't detect it. One envelope will be marked and the others won’t be marked.

**Exceptional flow:**

a) ATM/ADWM cannot communicate with Banking System

1. The ATM explains the communication malfunction.
2. The ATM asks the customer to speak to bank staff.
3. End use case.

b) Customer does not respond to ATM/ADWM prompt

1. The ATM/ADWM prompts the customer to take action.
2. The ATM/ADWM waits for a period of time.
3. If action is not taken, the ATM/ADWM returns the card.
4. Customer takes their card.
5. End use case.

**Level: // shld decide**

**Post conditions:**

* At the end of the use case, the card is returned back to the customer by the machine.
* At the end of the use case, all account and transaction logs are balanced, and communication with the banking system is reinitialized.

**Stakeholders:**

* Customers: Customers gets to conduct online transactions in a secured manner with ease.
* End banking system: The end banking system as a whole should be equipped with all banking facilities and provide the customers with all necessary banking services in order to ensure secured online transactions.