# Strategy

If you need to validate what the organization is there to do.

Vision:

## Problem statement

Use standard format of <this problem> affects <these people> with these <specific bad results>. Our solution will help by providing <general good results>.

The access to banking services is restricted to bank hours affecting the majority of our bank customers by having to wait to the next business day, adding more staff or hours, or finding another solution. Our solution will allow the bank to provide services at any hour and in locations where a bank branch is not located reducing overhead costs. Replacing teller and not having bank open with automation of transaction external to bank reduces overhead and improves customer experience.

### Related problems

During problem definition, other problems can easily come up and should be captured.

## Constraints

The rules that will constrict either the scope, the budget, or the timeframe of the project. Risk is a probability that these will be in force. Assumptions for design will be to take the risk or not and trace back to these.

Infrastructure, technology, laws, etc.

## Stakeholders

A list of the people and systems that have an impact on the project requirements. Actors can be extracted and grouped from this list.

### People

|  |  |  |
| --- | --- | --- |
| Name | Position / Dept | Notes |
| I. Hafmunee | Bank president |  |
| Gee Kee Tekhed | CIO of bank |  |

### Systems & data sources

# Analysis – system level

Post-elicitation stage done with all analysts after the initial interviews and document reviews. Do this first.

## Actors

First step in analysis is to brainstorm and validate these roles and systems.

* Customer
* System
* Maintenance

## Use case names

Second step in analysis is to brainstorm and validate scope at the goal level.

### System use cases

Only those use cases which start after the software is running and an actor directly interacts with the system.

Grouped use cases are either system or business use cases and can be groups of value/goal level use cases or groups of partial use cases like used in this example. Also common in this section are the Manage Entity type of use case which expands into the CRUD use cases. e.g. Manage Account = Create Account, Read Account (Display details of account), Update Account, Delete Account.

* Display idle screen

### Business use cases

Any use case that does not completely exist as an interaction between software and the actor.

* Stock envelopes
* Do ATM session (startup and shutdown)

### Use case diagram

Here would be a good place to put a Visio diagram(s) showing the relationships of all the use cases.

## Use case groups found

Use cases can be structured to roll up to a group name. Helpful to reduce complexity.

* Do session
* Do secure transaction
  + Withdraw cash
  + Deposit funds
  + Transfer funds
  + Request balance
* Do secure maintenance
  + Fill cash
  + Reload receipt paper
  + Remove deposits
  + Do system preventative maintenance

## Partial goal names found

Use cases can be structured to drill down to a named sequence of tasks not ending in a goal or repeatable. Helpful to identify reusable parts.

* Retain card

# Project management

## Prioritization

Add other columns of ranking variables to mix in with weightings if useful. Keep the values simple.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Impact | \* Urgency | = Priority |  |
| Use case name | Business usage /  market potential 3=100-67%, 2= 66-34%, 1=0-33% | Business need / perceived value 3=exec/high,  2=mgmt/med  1=staff/low) | Multiplied  Result | In a group, ask for the top 3 and  count the  total. |
| Withdraw cash |  |  |  | 5 |
| Deposit funds |  |  |  | 4 |
| Transfer funds |  |  |  | 3 |
| Request balance |  |  |  | 3 |
| Display idle screen |  |  |  | 0 |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |
|  |  |  |  |  |

## Project Iterations

Move the use cases with priorities down to a schedule so that you can see what kind of sprints (Agile) you will have.

### set up

There needs to be a software stage to set up and get all the pieces initially running as a framework. It’s called stubbing out the system or mocking the system depending on what you need. It may be combined with the 1st iteration.

### 1st

The first iteration has to be the most complex use case or one that would likely fail. Stop the project early if this doesn’t work.

* Withdraw cash – complex

### 2nd

* Deposit funds - medium
* Request balance - easy

### 3rd

* Transfer funds - complex
* Display idle screen - easy

# Analysis - detail

Final versions of the requirements documents used for walk-throughs with the main stakeholders.

## System

**Design constraints** – ATM chassis XYT75848#4

Useful when you don’t use just business terms e.g. web site is required, SQL Server is required, location must be…

## Use Cases

### Summary of all use cases

B = business

S = system

G = group

P = partial

A summary of the use cases in bullets or numbers serving like a table of contents. Summary focuses on inputs and outputs.

* **ATM.S1 – Withdraw Cash** – Customer asks for cash, gets cash.
* **ATM.S2 – Transfer Funds** – Customer transfers money between any two accounts.
* **ATM.S3 – Request balance** – Customer gets current account balance.
* **ATM.S4 – Deposit Funds** – Customer deposits checks and/or cash.
* **ATM.GP1** – Do Transaction – any transaction type (S1-S4)
* **ATM.G1** – Do Secure Session – set up security by validating card and PIN and ending with receipt.

### ATM.S1 – Withdraw Cash

Information about the use case, metadata

**Author** – BA class 1/19/18

**Date written** – 1/19/18

**Actors** – Customer

Does not include those participants involved but does initiate/trigger this flow of events.

**Related systems** – Bank

Sometimes called (supporting actors)

**System** – ATM

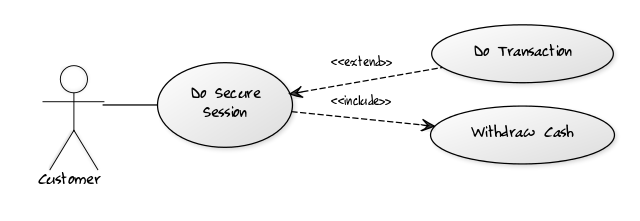
Would not be used if this were a business use case

**Priority** – 9

Get this from the priority chart.

**Type** – Goal

Options are: goal | partial goal | group of goals | group of partial goals



#### Pre-conditions

Rules for beginning this use case: state of system prevents usage, must be testable

* Enough in cash in machine based on RULE-**Transaction withdrawal limit.**

#### Course of Events

The sequence of tasks in conversation format between actor and system. Start each number with the system except the trigger and combine actor responses to system events. Rules are placed under the task unless they can be reused and then they are referenced and placed in a separate file.

1. The actor selects option to withdraw cash.
2. The system prompts actor for account to use (SD#4). The actor selects account.
3. The system prompts actor for withdrawal amount (SD#5). The actor enters amount.
4. The system prompts actor to wait while transaction is processing (SD#6). The system validates withdrawal amount requested.
   1. RULE – **Sufficient funds** – Amount requested must be less than or equal to account balance.
   2. RULE – **Daily withdrawal limit** – Amount requested must be less than or equal to $1000 per day starting at midnight local time and not available until the next 24 hour period.
   3. RULE – **Transaction withdrawal limit** – Amount requested must be less than or equal to $400.
   4. RULE – **Withdrawal increments** - $20 increments
5. The system prompts actor to confirm amount (SD#7). The actor confirms amount.
6. The system requests bank to update account with the withdrawal transaction (DD). The bank confirms update. The system makes a log entry (**DD**) for the communication.
7. The system decrements cash in machine. The system dispenses cash. The system makes a log entry (**DD**) for the withdrawal. The system prompts actor to take cash (SD#8). The actor takes cash.

#### Extension points – optional

Sequences that return control back to the course of events after finished.

* Sequence name (#) –

#### Extension points – errors, exceptions

Errors occur at any point where there is a validation of a rule.

Errors occur at communication to other systems.

* **Bank communication fails** (6) – Retry sending message three times. If no comm then, abort transaction…
* **Cancel key** (1-3, 5) –
  + System prompts actor to quit session.
  + Actor confirms.
  + System ends use case.

#### Post-conditions

Is it really important to review the necessary outcomes of this use case? If so, summarize here.

#### Notes/ Special Requirements

Any kind of quality, capacity, security, availability, disaster recovery information.

* Security recommendations: Video is desired, lighting
* Graphic design – contrasting color

### ATM.GP1 – Do Transaction

Information about the use case, metadata

**Author** – BA class 1/19/18

**Date written** – 1/19/18

**Actors** – Customer

Does not include those participants involved but do not initiate/trigger this flow of events.

**Related systems** – Bank

Sometimes called (supporting actors)

**System** – ATM

Would not be used if this were a business use case

**Priority** – n/a

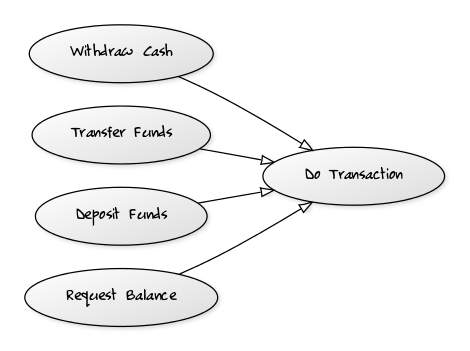
Get this from the priority chart.

**Type** – Group of partial goals

Options are: goal | partial goal | group of goals | group of partial goals

**Included in** – ATM.G1 Do Secure Session

**Extends in** – ATM.G1 Do Secure Session



### ATM.G1 – Do Secure Session

Information about the use case, metadata

**Author** – BA class – 1/19/18

**Date written** – 1/19/18

**Actors** – Customer

Does not include those participants involved but do not initiate/trigger this flow of events.

**Related systems** – Bank

Sometimes called (supporting actors)

**System** – ATM

Would not be used if this were a business use case

**Priority** –

Get this from the priority chart.

**Type** – Group of goals

Options are: goal | partial goal | group of goals | group of partial goals

#### https://yuml.me/2ed1c33c.png

#### Course of Events

The sequence of tasks in conversation format between actor and system. Start each number with the system except the trigger and combine actor responses to system events. Rules are placed under the task unless they can be reused and then they are referenced and placed in a separate file.

1. The use case starts when the actor touches the screen.
2. The system prompts actor to insert bank card (**SD#1**). The actor inserts card.
3. The system validates card. The system prompts actor to enter PIN (SD#2). The actor enters PIN.
   1. RULE – **Valid ATM card** – One of these cards: …
   2. RULE – **PIN required number digits** – 4 digits required.
4. The system requests bank to validate PIN. The bank returns approval and all **account information** associated with the card **(DD)**. The system makes a log entry (**DD**) for the communication.
5. The system displays the main menu screen (SD#3).
6. **<<includes>> GP1-Do Transaction**
7. The system returns card. The system prompts actor to take card (SD#?). The actor takes the card.
8. The system prints receipt. The system prompts actor to take receipt (SD#?).The actor takes receipt.
9. The system prompts the actor for another transaction (SD#?). The actor declines.
10. The system prompts the actor with a thank you screen (SD#?). The system starts a idle timer.

#### Extension points – optional

Sequences that return control back to the course of events after finished.

* **GP1-Do Transaction (7)**

#### Extension points – errors, exceptions

Errors occur at any point where there is a validation of a rule.

Errors occur at communication to other systems.

* Sequence name (#) –

#### Post-conditions

Is it really important to review the necessary outcomes of this use case? If so, summarize here.

#### Notes/ Special Requirements

Any kind of quality, capacity, security, availability, disaster recovery information.

### ID – Use case name

Information about the use case, metadata

**Author** –

**Date written** –

**Actors** –

Does not include those participants involved but do not initiate/trigger this flow of events.

**Related systems** –

Sometimes called (supporting actors)

**System** –

Would not be used if this were a business use case

**Priority** –

Get this from the priority chart.

**Type** –

Options are: goal | partial goal | group of goals | group of partial goals

#### Pre-conditions

Rules for beginning this use case: state of system prevents usage, must be testable

#### Course of Events

The sequence of tasks in conversation format between actor and system. Start each number with the system except the trigger and combine actor responses to system events. Rules are placed under the task unless they can be reused and then they are referenced and placed in a separate file.

* The use case starts when the actor …
* The system responds by … The actor does something else.
* The system validates something… The actor responds
  1. **RULE – Name:** The conditions that must be met for the validation.
  2. **RULE – Name:** The conditions that must be met for another validation.
* The system responds by … The actor does something else.
* The system does something…

#### Extension points – optional

Sequences that return control back to the course of events after finished.

* Sequence name (#) –

#### Extension points – errors, exceptions

Errors occur at any point where there is a validation of a rule.

Errors occur at communication to other systems.

* Sequence name (#) –

#### Post-conditions

Is it really important to review the necessary outcomes of this use case? If so, summarize here.

#### Notes/ Special Requirements

Any kind of quality, capacity, security, availability, disaster recovery information.

### ID – Use case name

Information about the use case, metadata

**Author** –

**Date written** –

**Actors** –

Does not include those participants involved but do not initiate/trigger this flow of events.

**Related systems** –

Sometimes called (supporting actors)

**System** –

Would not be used if this were a business use case

**Priority** –

Get this from the priority chart.

**Type** –

Options are: goal | partial goal | group of goals | group of partial goals

#### Pre-conditions

Rules for beginning this use case: state of system prevents usage, must be testable

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The sequence of tasks in conversation format between actor and system. Start each number with the system except the trigger and combine actor responses to system events. Rules are placed under the task unless they can be reused and then they are referenced and placed in a separate file.

* The use case starts when the actor …
* The system responds by … The actor does something else.
* The system validates something… The actor responds
  1. **RULE – Name:** The conditions that must be met for the validation.
  2. **RULE – Name:** The conditions that must be met for another validation.
* The system responds by … The actor does something else.
* The system does something…

#### Extension points – optional

Sequences that return control back to the course of events after finished.

* Sequence name (#) –

#### Extension points – errors, exceptions

Errors occur at any point where there is a validation of a rule.

Errors occur at communication to other systems.

* Sequence name (#) –

#### Post-conditions

Is it really important to review the necessary outcomes of this use case? If so, summarize here.

#### Notes/ Special Requirements

Any kind of quality, capacity, security, availability, disaster recovery information.

# Design

## Assumptions

Those constraints that are risks which have to be taken in order for a design process to begin.

## External Text

A separate file to describe the exact text of the messages, error messages

### Messages

* M#1 –

### Errors

* ERR#1

## Screens

A separate file to collect design recommendations from users and analysts for either suggestions on final design or for ideas while thinking through the requirements.

SD#1 – Insert bank card

**Type** – User elicited - analysis

## Reports

R#1 – Report layout

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Header info | | | | | | | |
| Sort 1  Header with page break | Sort 2  Header | Sort 3  Ascending | Sort 4 |  |  |  |  |
| Field 1 | Field 2 | Field 3 | Field 4 | Field 5 | Field 6 | Field 7 | Field 8 |
| Formatting to apply - | Links to  detail - screen |  |  |  |  |  |  |
| Total on  Sort 1 |  | Total on  Sort2, Sort 3 |  |  |  | Total on All | Total on All Average All |
| Footer info | | | | | | | |

# Data Dictionary

A separate file to describe in business terms the data entities and data groupings of the entire project.

* **Account** 
  + **\*Transaction**
  + ID
  + type
    - **rule** – one of the following: checking, savings
  + PIN
  + balance
* **Transaction**
  + **\*Account**
  + **\*Session**
  + amount
  + type
  + failure type
  + status