

# **Loan Portal**

## **How-To-Guide**

**Version 1.1**

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## 1 Loan Portal Overview

The Loan Portal provides a platform for a company to share key real time (updated daily) and time series (updated at month-end) statistics of a sub-set or batch of their PAYG loans with a trusted and interested third party such as an investor. The Loan Portal allows investors to view how a company's Solar PAYG portfolios is managed and performing over time and gives them reassurance that, at any time, they can view the actual performance of a batch or sub-set of loans.

The Loan Portal draws directly from a company's customer and payments database(s) to allow companies to select a batch of PAYG loans from their overall portfolio and share aggregated performance data with investors. Batch performance is presented on a dashboard showing key charts and statistics summarising performance: 'Batch Summary Statistics' displays a current batch status snapshot; 'Batch development over time' charts display a time series of how the batch is developing based on month-end status; 'Restructured Loans' charts display a time series of number and value of loans in the batch that have been restructured, and the 'Loan Repayment Chart' which displays how the batch is performing against expectations.

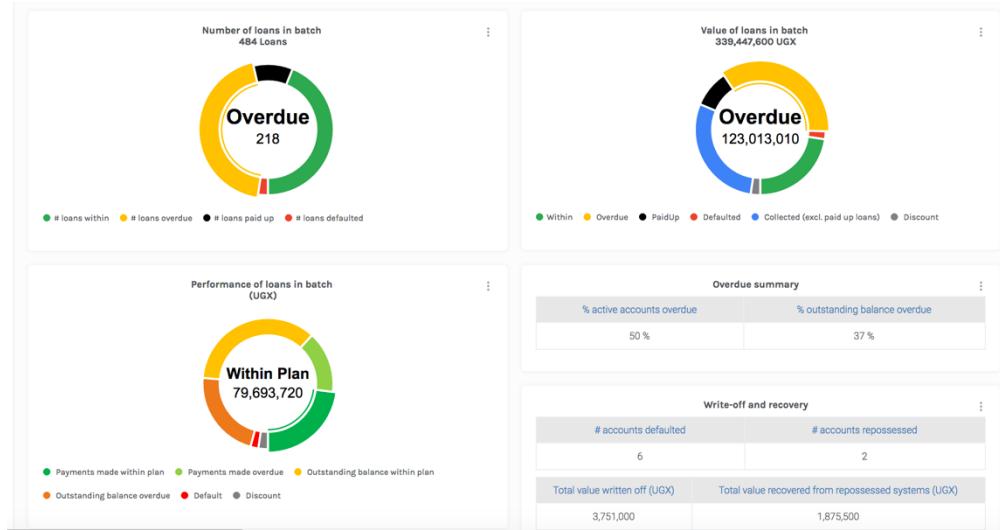
When a company wishes to implement the Loan Portal, the company takes the open source Loan Portal tool and implements it on their proprietary database(s). Each company administered Loan Portal operates completely independently: data is transferred to and stored only in the Company administered Loan Portal, there is no additional transfer of Company data outside a Company's individually configured Loan Portal.

At all times, the Company has complete and exclusive control over which parties are able to access the data in the loan portal.

The data in the dashboard are presented in aggregate form (individual account details cannot be accessed by non-Administrators) no data that can be used to identify an individual customer is available through the dashboard.

## 2 Dashboard

### 2.1 Batch summary statistics



### 2.1.1 Number of Loans in Batch

This chart shows a current snapshot of the total number of loans in a Batch. The current status of the loans in the Batch is shown in aggregate: number of loans within, number of loans overdue, number of defaulted loans, and number of loans fully paid up.

#### *Definitions*

**# loans within:** Loans on which the payments are within plan as per the definition of the respective company. Based on status assigned to a loan within a company's payments database (status is not determined by Loan Portal).

**# loans overdue:** Loans on which at least one payment is overdue as per the definition of the respective company. Based on status assigned to a loan within a company's payments database (status is not determined by Loan Portal).

**# loans defaulted:** Loans which the company deems no longer viable and expects no further payments compliant with loan terms as per the definition of default of the respective company. Based on status assigned to a loan within a company's payments database (status is not determined by Loan Portal).

**# loans fully paid up:** Loans on which full payments have been made. Customers may have benefited from a discount based on early payment before full loan term is up. Based on status assigned to a loan within a company's payments database (status is not determined by Loan Portal).

### 2.1.2 Value of Loans in Batch

This chart shows a current snapshot of the total value of loans in a batch. The total value of the loan is defined as the total expected loan payments at the end of the standard loan term.

The value of the loans is broken down to show a high-level status of the loan value (collected amounts, balance of loans that are within plan, balance outstanding of loans that are overdue, outstanding balance on loans that a company considers as defaulted, value of loans that are paid up, and the value of any discounts applied to loans).

The value of the loans shows only the financed amount (exclusive of deposit/upfront payments that are not financed).

#### *Definitions*

**Within:** Total outstanding balance (to end of standard company loan term) on loans on which the payments are within plan as per the definition of the respective company.

**Overdue:** Total outstanding balance (to end of standard company loan term) on loans on which at least one payment is overdue as per the definition of the respective company.

**Paid up:** Total final value of loans on which full payment has been made.

**Defaulted:** Total outstanding balance (to end of standard company loan term) on accounts that are categorised as defaulted as per company definition and flagged as such in company database.

**Collected (excl. paid up loans):** Total amount collected on the loans in the batch to date. This includes collected amounts on loans that are currently 'within', 'overdue', and 'defaulted'. This excludes the total final value (total payments) of paid up loans that appears

separately on the chart. This excludes the payment of any non-financed payments, e.g., cash deposit.

**Discount:** Total value of any discounts applied to loans in the batch. Discounts may be for payments or full payment made ahead of schedule or other reasons as per respective company policy

### 2.1.3 Performance of Loans in Batch

This chart shows the current snapshot of the performance of the loans, by value, in the batch in greater detail to include both the status in which an account was when respective payments were made, and the status of outstanding balances on overdue accounts.

#### *Definitions*

**Payments made within plan:** Sum of all payments made against loans in the batch that were ‘within plan’ when payment was made. Payments made excludes deposit/upfront payment where deposit/upfront payment was not financed.

**Payments made overdue:** Sum of all payments made against loans in the batch that were overdue when payment was made. Payments made excludes deposit/upfront payment where deposit was not financed.

**Outstanding balance within plan:** Sum of the outstanding balance (to end of loan term) that is not yet due on accounts in batch

**Outstanding balance overdue:** Sum of the outstanding balance (to end of loan term) that is past due

**Defaulted:** Total outstanding balance (to end of loan term) on accounts that are categorised as defaulted as per company definition and flagged as defaulted in company database

**Discount:** Total value of any discounts applied to loans in the batch. A discount is the amount of the overall value of the loan to full term (including interest) that has been forgiven by the company. Discounts may be for payments or full payment made ahead of schedule or other reasons as per respective company policy.

### 2.1.4 Overdue accounts

Current snapshot summary of overdue status in loan batch

1) Overdue accounts as a percent of total active loans in batch (total number of loans –

number of defaulted loans – number of paid up loans)

2) Value of overdue payments as a percent of total outstanding balance on loans in batch

### 2.1.5 Defaults, Repossessions, Write-Offs & Value Recovered

These tables summarise the state of write-offs and recovered systems and the value associated with them in the batch.

**# accounts defaulted:** the number of accounts that are classified as defaulted by the company excluding the number of accounts associated with kits recovered from clients

**# accounts recovered:** the number of kits associated with defaulted accounts that have been recovered from clients

**Total value written off (UGX):** the total outstanding balance on defaulted accounts and recovered accounts to date

**Total value recovered from repossessed systems (UGX):** the value that the company has recovered from repossessed accounts (where relevant, e.g., through restocking, auctions etc)

## 2.2 Batch development over time

This tab contains charts which show how the loan batch is developing over time based on a series of month-end views of the batch. The most recent portfolio statistics are shown in the current month.



### 2.2.1 Number of loans in batch

Month-end time series view of number of loans in batch and respective status of loans in batch (number of loans within, number of loans overdue, number of loans paid up, number of loans defaulted).

For additional detail on data series definitions, see [2.1.1 Number of Loans in Batch](#).

## 2.2.2 Value of loans in batch

Month-end time series view of the total value of loans in batch and respective month-end status of loans in batch (within, overdue, paid up, defaulted, discounted). The value of the loans show only the financed amount (exclusive of deposit payments that are not financed)

For additional detail on data series definitions, see *2.1.2 Value of Loans in Batch*.

## 2.2.3 Performance of loans in batch

Month-end time series view of the performance of the loans, by value, in the batch. Includes the status in which an account was when respective payments were made, and the status of outstanding balances on overdue accounts, paid up loans, and discounts granted on loans. The value of the loans shows only the financed amount (exclusive of deposit payments that are not financed)

For additional detail on data series definitions, see *2.1.3 Performance of Loans in Batch*.

## 2.2.4 Write-off & recovery

Month-end time series view of 1) outstanding balances (to end of standard contract period) on defaulted accounts in the batch written off by the company from contract start date to respective month-end, and 2) value recovered from repossessed systems from contract start date to respective month-end.

Value of outstanding balance on defaulted accounts and value recovered provided by respective company.

## 2.2.5 Number of overdue loans

Month-end time series view on number of loans in batch on which one or more payments are overdue. Classified by amount of time since oldest payment due date of an amount still outstanding was missed.

### **Definitions**

**PAR 1:** Number of loans in batch which have at least one payment overdue between 1 and 29 days (i.e., oldest payment due date for one or more payment still owed is between 1 and 29 days in the past)\*

**PAR 30:** Number of loans in batch which have at least one payment overdue between 30 and 59 days (i.e., oldest payment due date for one or more payment still owed is between 30 and 59 days in the past)\*

**PAR 60:** Number of loans in batch which have at least one payment overdue between 60 and 89 days (i.e., oldest payment due date for one or more payment still owed is between 60 and 89 days in the past)\*

**PAR 90:** Number of loans in batch which have at least one payment overdue by 90 or more days (i.e., oldest payment due date for one or more payment still owed is 90 or more days in the past)\*

**Default:** Number of loans in batch that are classified by the respective company as defaulted

*\* A loan can only have one PAR classification (i.e., cannot be PAR 1 and PAR 30). If a loan has several payments overdue, the oldest overdue payment will determine the PAR classification*

Calculated by the loan portal based on the oldest payment due date of an amount still outstanding ('next payment date') provided by the respective Company.

## 2.2.6 Value of overdue loans

Month-end time series view on total outstanding balance of loans in batch on which one or more payments are overdue. Classified by amount of time since oldest payment due date of an amount still outstanding was missed.

### **Definitions**

**PAR 1:** Total outstanding balance at respective month-end of loans in batch which have at least one payment overdue between 1 and 29 days (i.e., oldest payment due date for one or more payment still owed is between 1 and 29 days in the past)\*

**PAR 30:** Total outstanding balance at respective month-end of loans in batch which have at least one payment overdue between 30 and 59 days (i.e., oldest payment due date for one or more payment still owed is between 30 and 59 days in the past)\*

**PAR 60:** Total outstanding balance at respective month-end of loans in batch which have at least one payment overdue between 60 and 89 days (i.e., oldest payment due date for one or more payment still owed is between 60 and 89 days in the past)\*

**PAR 90:** Total outstanding balance at respective month-end of loans in batch which have at least one payment overdue by 90 or more days (i.e., oldest payment due date for one or more payment still owed is 90 or more days in the past)\*

**Default:** Total outstanding balance at respective month-end of loans in batch that are classified by the respective company as defaulted

*\* A loan can only have one PAR classification (i.e., cannot be PAR 1 and PAR 30). If a loan has several payments overdue, the oldest overdue payment will determine the PAR classification*

## 2.3 Restructured loans

### 2.3.1 Number of restructured loans in batch

Month-end time series view of the cumulative number of restructured loans in the batch. Restructured status to be determined and flagged by respective company.

### 2.3.2 Value of restructured loans in batch

Month-end time series view of the cumulative value of restructured loans in the batch. The value of the restructured loan is taken at the time of restructuring. Restructured status amount to be determined by respective company.

### **Definitions**

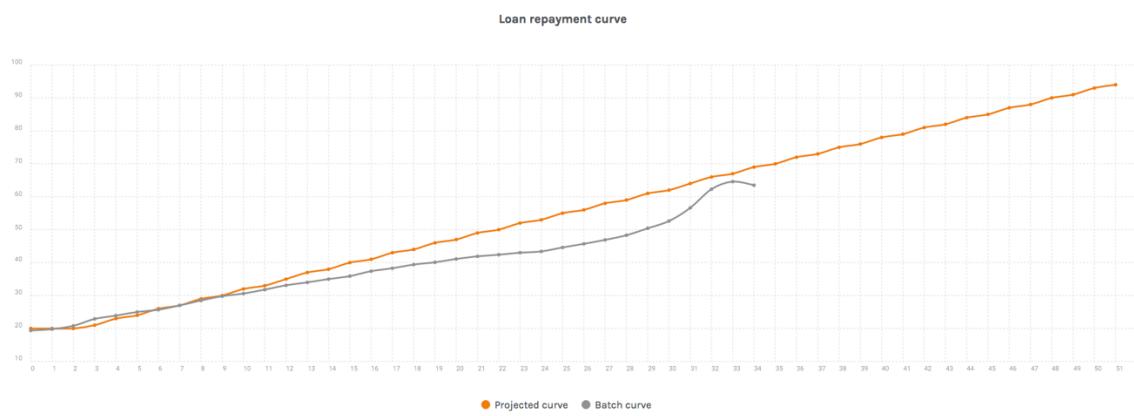
**Amount overdue at restructuring:** The amount of the outstanding balance past due on the restructuring date

**Outstanding balance at restructuring:** The total outstanding balance on the date of restructuring

## 2.4 Loan repayment chart

This chart shows 1) the expected repayment curve and 2) the actual repayment curve based on the performance of the loans in a specific batch. The curves reflect the percentage of total PAYG contract value (upfront payments plus regular instalment payments over the standard loan term) expected (in the ‘Projected curve’) or observed (in the ‘Batch curve’) throughout the maturity of the batch.

*Note: Total PAYG contract value includes non-financed payments, for example cash deposits paid at outset of loans.*



### Expected curve:

- The expected percent of total contract value paid off at any given day. This is defined by the company.
- In the example provided, the curve is based on the **Village Power** payment schedule and an expected default rate:
  - upfront payment (20% of cash price up-front plus value of 14 days of instalment payment)
  - grace period (no payments due) for first 14 days after upfront payment is made)
  - daily payments up to 360 days
  - default rate of 4%
- The ‘expected curve’ may also be based on the payment behaviour observed in other company batches or the full portfolio of the respective company.

### Batch curve

- Each loan in a respective batch is assessed from Day 0 of the loan and a time series of the total payments made against each loan is developed up to the number of days that the loan has been active to date.
- The ‘batch curve’ is calculated by taking the average of the percent of total PAYG contract value (Sum of all payments made up to a given day of maturity/ Total PAYG contract value) across all accounts on each day of maturity (e.g., Day 0, Day 1, ... Day 250 etc.)
- Only accounts which have reached a certain maturity (e.g., Day 250) are considered in the average of that day.

### Example

- A batch of 10 loans with the oldest loan in the batch being 15 days old may be distributed as follows: all 10 loans are at least one day old; 5 loans are at least 10 days old; but only one is 15 days old
- The average % of loan repaid for day one reflects the average repaid by day one for all 10 loans; the average % of loan repaid at day 10 is the average of the 5 loans that are at least 10 days old; and the average % of loan repaid at day 15 only reflects the % repaid on day 15 of the only account that has reached that maturity
- There may be some fluctuations in the curve as the number of accounts over which the % of loan repaid is decreasing

## 3 Security

### 3.1 Data security

The Loan Portal operates completely independently once implemented. There is no sharing of company data externally.

The portal, and access to the portal, is controlled by the company using it. A user must have appropriate credentials, as initiated by the Company's Loan Portal Administrator in order to access the dashboard. The Administrator can define what Batches a user profile has access to and what charts can be viewed by a user. Obviously, if an investor is working with more than one company using the portal, the investor will have different user profiles and log-ons for each Company.

The decision of where to host the Loan Portal and the security implications associated with that choice are the using Company's responsibilities.

### 3.2 Controlling access to loan portal

#### 3.2.1 Setting up user profiles

The Company determines who gets access to their Loan Portal and can manage to which charts each user has access.

There are two possible user roles in the Loan Portal

- Administrator (read/write): set up and manage loan batches, set up and manage user profiles, access and view all dashboard tabs for all Batches
- Investor (read): Can access and view the dashboard tabs that have been shared with the user profile, and download dashboard summary data for those tabs. Can only load and view statistics of batches that have been shared with the specific user profile (the investor can select which of the batches assigned to the profile to view through the Batch drop-down menu next to the 'Load' button on the Dashboard).

The Company's Loan Portal Administrator can create a new user profile through the 'User Profile' page accessed by clicking on 'Profiles' in the left navigation menu, see Figure 1.

The screenshot shows the 'User Profiles' page. At the top, there is a navigation bar with a logo, 'User Profiles' title, 'New' button, and 'Share Graphs' button. Below the navigation is a search bar and a table listing five user profiles. The columns in the table are First Name, Last Name, Organisation, Email Address, Role, and Batch and chart access. The profiles listed are Admin, Annie, Fredrick, Isaac, and Joshua. Each profile has a checkbox next to it and a 'Batch and chart access' icon. At the bottom of the table, it says 'Showing 1 to 5 of 5 entries' and has 'Previous' and 'Next' buttons.

Figure 1: Profile management page

The administrator clicks the ‘New’ button and then sets up a new user profile by specifying the new users first name, last name, organisation, email, and user role, see Figure 2.

The screenshot shows the 'Create New User Profile' dialog box overlaid on the 'User Profiles' page. The dialog box contains fields for First Name, Last Name, Organisation, E-mail, Confirm E-mail, and Select User Role. The 'Select User Role' dropdown is currently empty. At the bottom right of the dialog box are 'Close' and 'Save' buttons. The background 'User Profiles' page shows the same list of users as Figure 1.

Figure 2: Profile set up screen

Once a user profile has been set up, the Administrator selects the profile on the ‘User Profiles’ page and then clicks on the ‘Batch and chart access’ icon associated with that user profile. From the ‘Investor Batches and Graphs’ window the administrator can view the Batches and Charts which the user profile can view.

The Administrator can remove access to individual batches, and also ‘Add New’ batches to the user profile, see Figure 3 and 5.2.1.

The Administrator can also remove access to chart tabs, and also ‘Add New’ charts to the user profile, see Figure 3 and Section 3.2.2.

Figure 3: Manage user profile access to different batches and graphs

### 3.2.2 Tailoring the charts to an investor profile

The standard charts and tables in the four tabs of the Dashboard ('Batch Summary Statistics', 'Batch development over time', 'Restructured loans', and 'Loan repayment') can be turned on and off by the Administrator to tailor the view that a specific Investor profile has of a given batch.

After the investor profile has been created, the Administrator clicks the 'Share Graphs' button on the 'User Profiles' page accessed through the 'Profiles' link in the left navigation menu. In the 'Select Graphs' field, the Administrator can select the tabs that the Investor profile will be able to view (see *Figure 4*).

Figure 4: Graph selection screen

### 3.2.3 Setting passwords

Once a new profile has been created on a company's Loan Portal, the Portal sends an email to the new user with a link to set a password. The user follows the link, sets a password, and

gets redirected to the Company's Portal log-in page where they enter their user name and password.

### 3.2.4 Logging in

Once a valid user profile has been established, a user can log in to the portal through the Portal 'Sign In' page, see *Figure 5*, accessed through the Portal URL established by the Company.

The form is titled 'SIGN IN'. It contains two input fields: 'Username' and 'Password'. Below these is a checkbox labeled 'Remember me'. A large blue 'Log In' button is centered below the inputs. At the bottom left, there is a link with a lock icon labeled 'Forgot your password?'

*Figure 5: Sign In page*

### 3.2.5 Resetting passwords

If a user forgets their password they can trigger a password reset email through the 'Forgot your password?' link on the 'Sign In' page, see *Figure 5*.

The user needs the email address and access to the email account associated with the user profile.

The user then receives an email containing a link to reset the password.

## 4 Loan Portal Administration

### 4.1 Data inputs

There are two regular automated uploads from the company database that must be set up:

1. Loan data
2. Payments data

This data is populated in the Loan Portal through a restful API. This is the only interface to the Loan Portal. Please refer to the Technical Documentation for further detail <https://villagepowerltd.github.io/oss-public/>.

Additionally, there are two other data sets that need to be input via the loan portal and updated as necessary

1. Payment plan data
2. Expected repayment behaviour

#### 4.1.1 Loan input data fields from company database(s)

The following are the data fields that are required from the company database(s). These need to be correctly mapped into the loan portal.

| Input data field     | Definition   | Constraints  |
|----------------------|--|--|
| loan_id              | A unique loan identifier assigned to each loan by the company  | No null value. Should be an integer  |
| contract_date        | The date from which the customer starts owing payments against the account   | No null value. dd-mm-yy format   |
| model                | A unique model descriptor determined by the company  | No null value. Must match exactly with 'model' entered into payment plan screen            |
| details              | A unique descriptor for each payment plan (specific regular installments) offered by the company. Also to indicate version | No null value. Must match exactly with 'details' entered into payment plan screen          |
| outstanding_amount   | The amount outstanding on an account to full term  | No null value. Must be a number. If the account is fully paid off, this amount should be 0 |
| amount_paid          | The amount paid on an account to date  | No null value. Must be a number  |
| discount             | The amount that the company expects not to receive (vs. Full-term contract value) due to early payment or other reasons    | No null value. Must be a number  |
| status               | The status of the account as determined by the company (e.g., Within Plan, Overdue, Paid Up, Default)                      | No null value. Only one status per account   |
| sales_agent          | The company sales agent that made the sale (if relevant)*  | text   |
| distribution_agent   | The agent that distributes the product (if relevant)*  | text   |
| installation_address | Location of system installation or customer's given address*   | text   |
| store                | The company store that made the sale (if relevant)*  | text   |
| defaulted_amount     | Outstanding balance on loan when defaulted   | number or zero(0)  |
| restructured         | Loan has been restructured   | yes/no   |
| district             | district of installation or sale was made*   | text   |
| subcounty            | subcounty of installation or in which sale was made*   | text   |
| restructured_overdue | The outstanding amount on the loan at the time of restructuring  | number or zero(0)  |

\* these fields are used to search loans for batch selection only

Figure 6: Loan input data fields

| loan_id | model | contract_date | next_payment_date | amount_paid | outstanding_amount | status      | sales_agent | distribution_agent | installation_address | store   | defaulted_amount | discount | district | subcounty | details   | restructured | restructured_overdue |
|---------|-------|---------------|-------------------|-------------|--------------------|-------------|-------------|--------------------|----------------------|---------|------------------|----------|----------|-----------|-----------|--------------|----------------------|
| 3318    | A4    | 25-05-2016    | 25-05-2016        | 646500      | 735500             | Overdue     | Habib B     | Star agents        | Kampala              | Kampala | 0                | 0        | KAMPALA  | MAKINDYE  | Version 1 | yes          | 885500               |
| 3319    | A3    | 24-05-2016    | 24-05-2016        | 906000      | 78800              | Within Plan | Abu M       | Moon agents        | Mbale                | Mbale   | 0                | 0        | MBALE    | BUBYANGU  | Version 2 | no           | 0                    |
| 3320    | A4    | 09-05-2016    | 09-05-2016        | 2E+06       | 0                  | Paid Up     | Sara S      | Sun Agents         | Mbarara              | Mbarara | 0                | 70000    | Mbarara  | BUBAARE   | Version 2 | yes          | 150000               |
| 3321    | A2    | 10-05-2016    | 10-05-2016        | 161700      | 524700             | defaulter   | Sofie M     | Moon agents        | Iganga               | Iganga  | 524700           | 0        | IGANGA   | BUYANGA   | Version 2 | yes          | 674700               |

Figure 7: Loan details data format

For technical instructions on setting up these files and integrating into a Company's Loan Portal see the Technical Documentation provided <https://villagepowerltd.github.io/oss-public/>

#### 4.1.2 Payments input data fields from company database(s)

The payments data fields described in Figure 8 must be uploaded to the Portal for as many payments as have been made against the loans addressed in the loan portal and in the format displayed in Figure 9

| Input data field | Definition   | Constraints                      |
|------------------|--|----------------------------------|
| contract_date    | The date from which the customer starts owing payments against the account | No null value. dd-mm-yyyy format |
| payment_amount   | Amount paid (for each individual payment)                                  | No null values.                  |
| payment_date     | Date amount was paid (for each individual payment)                         | No null value. dd-mm-yyyy format |
| loan_id          | A unique loan identifier assigned to each loan by the company              | No null value. Number            |

Figure 8:Payments input data fields

| contract_date | payment_amount | payment_date | loan_id |
|---------------|----------------|--------------|---------|
| 11/07/2015    | 1497000        | 11/07/2015   | 68      |
| 11/07/2015    | 1000000        | 21/12/2015   | 68      |
| 11/07/2015    | 388000         | 26/04/2016   | 68      |
| 03/03/2015    | 259000         | 04/07/2016   | 70      |
| 03/03/2015    | 600000         | 03/03/2015   | 70      |
| 03/03/2015    | 250000         | 07/04/2015   | 70      |
| 03/03/2015    | 238000         | 13/05/2015   | 70      |
| 03/03/2015    | 237600         | 22/06/2015   | 70      |
| 03/03/2015    | 236600         | 04/08/2015   | 70      |
| 03/03/2015    | 600000         | 28/01/2016   | 70      |

Figure 9: Payments data format

For technical instructions on setting up these files and integrating in to a Company's Loan Portal see the Technical Documentation provided <https://villagepowerltd.github.io/oss-public/>.

#### 4.1.3 Payment plan data

For each model in the Batch, the following values on the Company's payment plans need to be input:

- Model name – as assigned by the Company
- Version – an identifier that the Company uses to identify different payment plan versions if applicable
- Down payment amount (UGX)
- Total loan amount (UGX) - includes deposit and all required instalment payments
- Daily payment (UGX)
- Payback period (days)

These values can be input on the 'Payment plan input' form accessed from the 'Payment plan' page which can be found by clicking the 'Payment plans' link in the left-hand menu bar and then clicking on the 'New' button.

Figure 10: Payment plan input screen

An overview of all payment plans input into and utilised by the Loan Portal is displayed on the 'Payment Plans' page, see Figure 11.

| Payment plans  |           |                           |                         |                     |                       |        |  |
|--|-----------|---------------------------|-------------------------|---------------------|-----------------------|--------|--|
| New  |           |                           |                         |                     |                       |        |  |
| Show [ 10 ] entries <input type="button" value="New"/> Search: [ ] |           |                           |                         |                     |                       |        |  |
| Model  | Version   | Down payment amount (UGX) | Total loan amount (UGX) | Daily payment (UGX) | Payback period (days) | Action |  |
| <input type="checkbox"/> VP1                                       | Version 2 | 72000                     | 432000                  | 1000                | 365                   |        |  |
| <input type="checkbox"/> VP1                                       | Version 1 | 60000                     | 362400                  | 840                 | 365                   |        |  |
| <input type="checkbox"/> VP1                                       | Version 3 | 71000                     | 431000                  | 1000                | 365                   |        |  |
| <input type="checkbox"/> VP2                                       | Version 2 | 114000                    | 686400                  | 1590                | 365                   |        |  |
| <input type="checkbox"/> VP2                                       | Version 1 | 99000                     | 595800                  | 1380                | 365                   |        |  |
| <input type="checkbox"/> VP2                                       | Version 3 | 112600                    | 688600                  | 1600                | 365                   |        |  |
| <input type="checkbox"/> VP3                                       | Version 2 | 164000                    | 984800                  | 2280                | 365                   |        |  |
| <input type="checkbox"/> VP3                                       | Version 1 | 144000                    | 864000                  | 2000                | 365                   |        |  |
| <input type="checkbox"/> VP3                                       | Version 3 | 157800                    | 985800                  | 2300                | 365                   |        |  |
| <input type="checkbox"/> VP4                                       | Version 2 | 264000                    | 1585200                 | 3670                | 365                   |        |  |

Showing 1 to 10 of 30 entries Previous [ 1 ] 2 3 Next

Figure 11: Payment plans overview

Edits can be made to individual Payment Plans by selecting the Payment Plan and then clicking on the pen icon in the ‘Action’ column. The Administrator updates the data and clicks the ‘Update’ button. This will immediately refresh the Payment Plan data. Updates will be applied to all loans of the Payment Plan model and version.

A Payment Plan can also be deleted by selecting the payment plan and then clicking on the bin icon in the ‘Action’ column.

#### 4.1.4 Expected repayment behaviour data

The following data needs to be input for each batch representing the Company’s expected customer in that Batch:

- 1) ‘Average repayment period’ for the company’s loans (determines the length of the x-axis of the ‘Loan repayment curve’)
  - This value is the number of days that an average customer of the company takes to pay off the ‘total PAYG contract value’

*Note: Only one ‘standard payment period’ is supported*

The Payback Period used in the payment plan is used here (see section 4.1.3)
- 2) Daily time series of the percent of ‘total PAYG contract value’ expected to have been paid by an average customer for the ‘Projected curve’ in the ‘Loan Repayment Chart’
  - Total cumulative payments/total PAYG contract value (upfront payments plus regular payments over the standard loan term) expected to have been received on a given day of maturity of a loan (e.g., 10 days after the ‘Contract start date’)
  - The time series needs to span from the ‘Contract start date’ (Day 0) to the number of days it will take the average customer to pay off their loan (the ‘Average repayment period’). This may be greater than the company’s official ‘repayment period’)
  - The time series value should take into account the expected default rate (for example assume 1-default rate \* daily payments (after 100% payment of deposits)).

Once a Batch has been set up in the Portal, the Administrator needs to set up a loan repayment curve input for that Batch. This can be done by clicking on the ‘New’ button on

the ‘Loan repayment curve input’ page accessed through the ‘Loan repayment curve input’ link on the left-hand menu. The Administrator then selects the Batch and enters in the ‘Average Payback Period (days)’ expected for that Batch, see Figure 12.

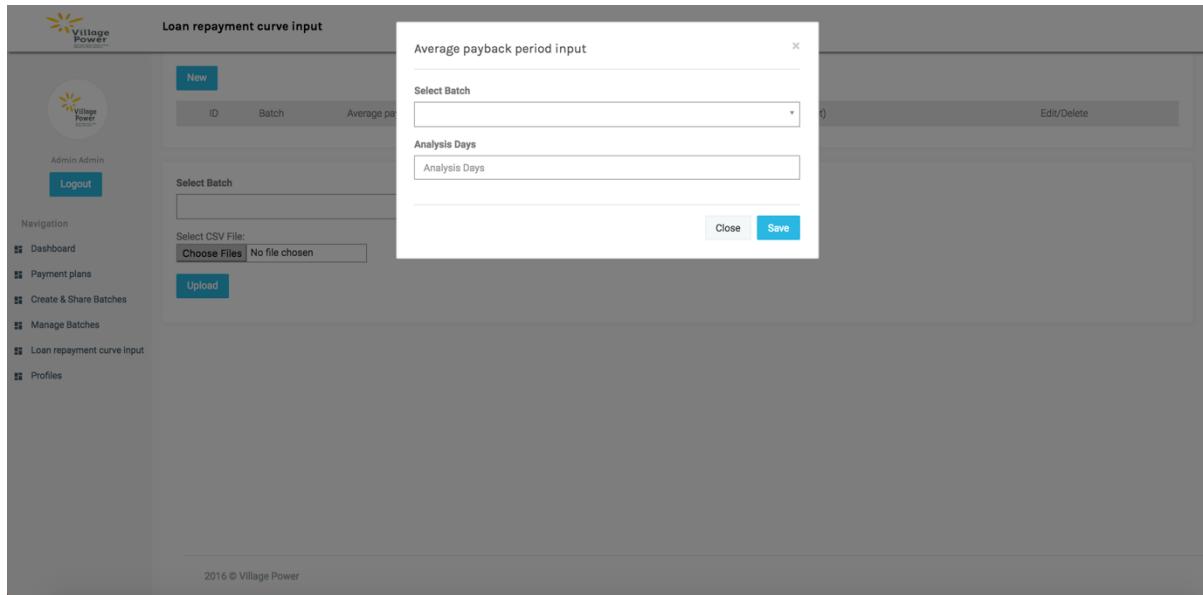


Figure 12: New loan repayment curve set up screen

To upload the expected payment curve data, the Administrator selects the Batch from the dropdown menu on the ‘Loan repayment curve input’ page and then ‘Choose files’ to select the CSV file described above and shown in Figure 13.

| percentage | day |
|------------|-----|
| 19         | 0   |
| 19         | 1   |
| 19         | 2   |
| 19         | 3   |
| 19         | 4   |
| 19         | 5   |
| 19         | 6   |
| 19         | 7   |
| 19         | 8   |
| 19         | 9   |
| 19         | 10  |
| 19         | 11  |
| 19         | 12  |
| 19         | 13  |
| 19         | 14  |
| 19         | 15  |
| 20         | 16  |
| 20         | 17  |
| 20         | 18  |
| 20         | 19  |
| 21         | 20  |
| 21         | 21  |
| 21         | 22  |
| 21         | 23  |
| 22         | 24  |
| 22         | 25  |
| 22         | 26  |
| 22         | 27  |

Figure 13: Expected payment curve data

## 5 Setting up loan batches

The Batches which will be displayed in the Loan Portal can be set up and managed in five steps:

1. Select loans from Company database(s) – the loan ‘Portfolio’ – and transfer select data for each of the selected loans to the Loan Portal
2. Create the Batch profile
3. Assign loans from the loan Portfolio to a specific Batch
4. Subsequently edit Batches (removal or addition of loans when necessary)

### 5.1 Select loans in company database(s) which will be used in Loan Portal

A Company determines the loans that they want to include in the Loan Portal Batch(es) directly within their database(s) or in the data transfer script. Select data fields on each of the selected loans need to be uploaded to the Loan Portal (see *section 4.1.1*). A Company can, of course, also transfer the select data fields for all their loans to the Loan Portal without making any selection of the loans to be transferred.

The Company is responsible for the functionality of selecting loans to be uploaded.

### 5.2 Creation of Batches

A new Batch can be created on the ‘Create & Share Batches’ page accessed through the ‘Create & Share Batches’ link in the left navigation menu on the Administrator dashboard.

The Administrator clicks the ‘New’ button and enters a name and description of the Batch, see *Figure 14*.

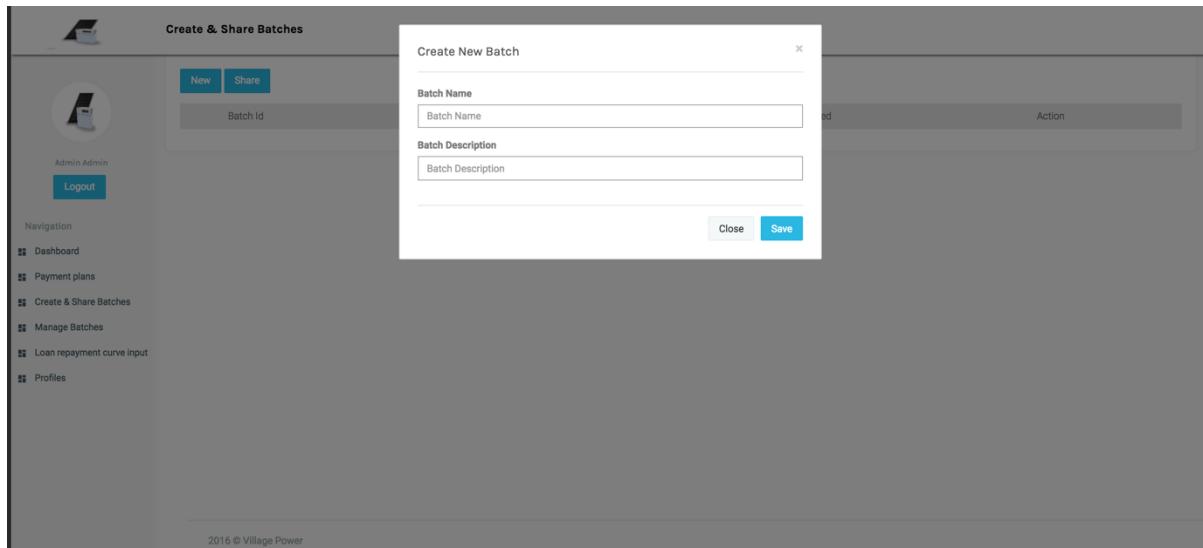


Figure 14: New batch creation screen

#### 5.2.1 Setting viewing rights of Batch

The administrator also sets the user profiles which will have access to a certain batch on the ‘Create & Share Batches’ page. The Administrator selects the batch, clicks on the ‘Share’ button, selects the user profile(s) that will have access to the particular Batch and clicks ‘Done’. Administrator profiles can view all batches.

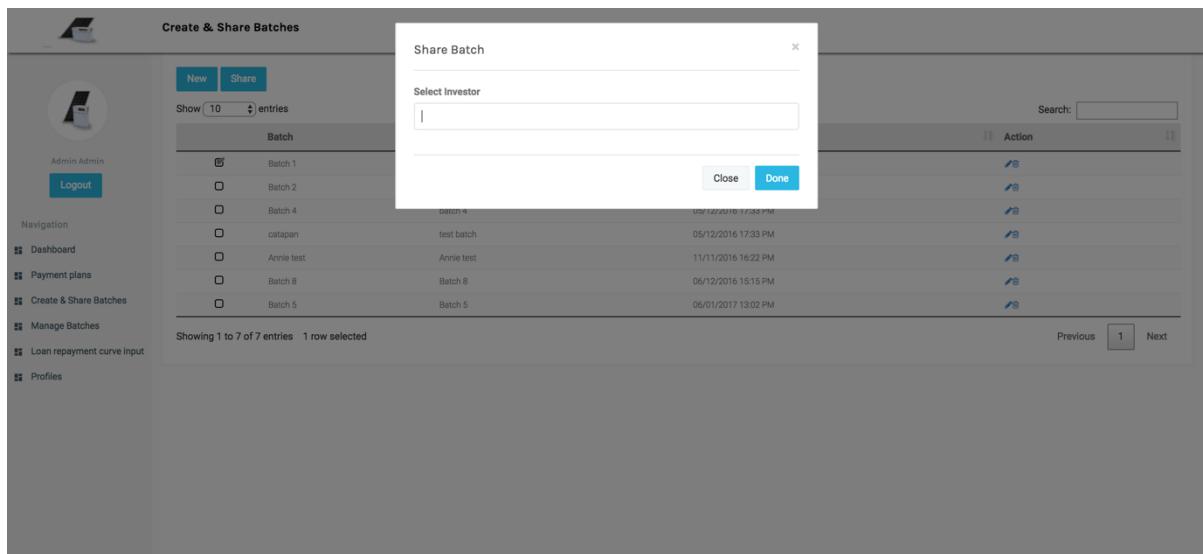


Figure 15: Set Batch viewing rights

The Loan Portal sends an email to both the Administrator and the user when a user profile has been given access rights to a batch.

### 5.3 Assigning loans to a Batch

Once a Batch has been created, loans need to be assigned to it. Loans can be assigned to Batches on the 'Populate batch' tab on the 'Batch Management' page accessed through the 'Manage batches' link in the left navigation menu on the Administrator's view.

The data fields on the Company's loans uploaded from the Company's database(s) (contract start date, outstanding amounts, loan status, product type, sales agent, distribution agent, store, installation locality) can then be searched to create and tailor Batches, see Figure 16.

The Company can tailor the data fields which can be used to search loans. Please see the accompanying technical documentation for a description

<https://villagepowerltd.github.io/oss-public/>.

Once the loans for inclusion in the Batch have been identified on each page of listed loans, the Administrator clicks on the selection box in the far left column and then clicks on 'Assign'.

The Administrator also follows the process above to subsequently add loans to a Batch.

The screenshot shows the 'Batch management' page. At the top, there's a 'Village Power' logo and navigation links for 'Admin Admin' and 'Logout'. Below that is a 'Select Batch' dropdown set to 'Batch 1' with buttons for 'Assign', 'Advanced Search', 'Update Dashboard', and 'Refresh'. A search bar labeled 'Search:' is also present. The main area displays a table of loan data for Batch 1, with columns including Account, Total Amount Paid, Down Payment Date, Outstanding Amount, Loan Status, Upload Date, Product Type, Sales Agent, Distribution Agent, Store, Installation Address, District, Sub-county, and Parish. The data shows various loans with different statuses like 'Overdue' or 'Paid Up'.

Figure 16: Searching the portfolio for loans

### 5.3.1 Advanced search

An advanced search can also be conducted on the loan data uploaded to the Loan Portal.

The advanced search can find loans initiated between two specific dates, loans generated by a specific sales agent, distribution agent, store, or based on customer address.

Search fields can, of course, also be tailored by the Company to suit their needs.

This screenshot shows the 'Advanced Search' dialog box overlaid on the 'Batch management' page. The search criteria include 'Down Payment Date From' and 'To' fields, 'Accounts from' and 'To' fields, and dropdowns for 'Sales Agent', 'Distribution Agent', 'Store', and 'Installation Address'. The main table below shows a subset of loans from Batch 1 that match these filters. The columns are identical to Figure 16, showing account details and geographical distribution.

Figure 17: Advanced loan search

## 5.4 Removing loans from a Batch

The Administrator can remove loans from a Batch on the 'Edit batch' tab on the 'Loan Batch Assignment' page accessed through the 'Manage Batches' link in the left navigation menu on the Administrator's view (see *Figure 18*).

The Administrator selects the Batch to be edited in the ‘Select Batch’ field, and then clicks the ‘Load’ button. The loans currently assigned to the Batch are then listed on the screen. The Administrator can select the loans to be removed (through scrolling through the list of loans, searching each column, or using the Advanced Search button, see *section 5.3.1*). Once the loans are selected, the Administrator clicks on the ‘Un-assign loans’ button and the ‘Update Dashboard’ button. Once the ‘Update Dashboard’ button is clicked, the ‘Summary Statistics’ charts will reflect the edited batch.

*Note: If loans are removed from a Batch, the previous month-end values in the ‘Portfolio development over time’ charts will reflect the Batch as it was at the end of the respective month. There is no back-calculation to reflect changes in the Batch loan composition.*

| Account | Total Amount Paid | Down Payment Date      | Outstanding Amount | Loan Status | Upload Date            | Product Type | Sales Agent                  | Distribution Agent | Store       | District | Sub-county     | Parish      | Village    |
|---------|-------------------|------------------------|--------------------|-------------|------------------------|--------------|------------------------------|--------------------|-------------|----------|----------------|-------------|------------|
| 3192    | 261700            | 07/07/2016<br>00:00 AM | 424700             | Overdue     | 29/01/2017<br>00:15 AM | VP2          | Jackson Moyoinga             | Habib Magezi       | Gomba VPC   | Gomba    | MADDU          | Kyamboobo   | Kyamboobo  |
| 3439    | 265800            | 06/06/2016<br>00:00 AM | 166200             | Within Plan | 29/01/2017<br>00:15 AM | VP1          | Ntarike Mansilu              | Habib Magezi       | Taceas VPC  | Mukono   | Nagoje         | Waggala     | Kito       |
| 3534    | 1634100           | 07/06/2016<br>00:00 AM | 910300             | Within Plan | 29/01/2017<br>00:15 AM | VP5          | Maimuna Pendrope Kabasinguzi | Habib Magezi       | Mubende VPC | Mubende  | South Division | Gayaza      | Gayaza     |
| 3581    | 234000            | 24/06/2016<br>00:00 AM | 452400             | Within Plan | 29/01/2017<br>00:15 AM | VP2          | Ssemekula Robert             | Habib Magezi       | Taceas VPC  | Wakiso   | Gombe          | Kigozi      | Kiyamuli   |
| 3588    | 397000            | 02/06/2016<br>00:00 AM | -1000              | Paid Up     | 29/01/2017<br>00:15 AM | VP1          | Bakusela Tony                | Habib Magezi       | Taceas VPC  | Mukono   | Kyampisi       | Kabembe     | Kiyunga    |
| 3601    | 1452000           | 01/06/2016<br>00:00 AM | 0                  | Paid Up     | 29/01/2017<br>00:15 AM | VP4          | Mariam Naisanga              | Habib Magezi       | Kampala VPC | Iganga   | Namalemba      | Idinda      | Bulogodha  |
| 3602    | 164000            | 02/06/2016<br>00:00 AM | 268000             | Within Plan | 29/01/2017<br>00:15 AM | VP1          | Mukama Paul                  | Habib Magezi       | Tororo VPC  | Tororo   | Mukujju        | Petta Ayago | Peta       |
| 3603    | 400000            | 01/06/2016<br>00:00 AM | 286400             | Within Plan | 29/01/2017<br>00:15 AM | VP2          | Brian Obbo                   | Habib Magezi       | Tororo VPC  | Tororo   | Mulanda        | Busembatia  | Busembatia |
| 3607    | 205700            | 02/06/2016<br>00:00 AM | 226300             | Within Plan | 29/01/2017<br>00:15 AM | VP1          | Aisedi Stephen               | Habib Magezi       | Tororo VPC  | Tororo   | Mukujju        | Mukujju     | Akoret     |
| 3612    | 844000            | 02/06/2016<br>00:00 AM | 140800             | Within Plan | 29/01/2017<br>00:15 AM | VP3          | Ben Rogers                   | Habib Magezi       | Taceas VPC  | Bulkwe   | Kawolo         | Kigeyi      | Waranda    |

Figure 18: Edit Batch tab

## 6 Backup

The Company operating the Loan Portal is responsible for ensuring backup of the data contained within the Loan Portal.

## 7 User support

The Loan Portal is a stand-alone tool able to be installed (independently) on respective Company databases. As such, the Loan Portal is not formally supported by the developers. There will be no central oversight or communication with the Portal as installed and used by companies and investors.

The Loan Portal is provided as an open source tool for Companies to use and tailor to their specific needs. The source code for the tool and the relevant examples are provided. Depending on demand and community engagement, a public repo may also be established for the tool.

## 8 FAQs

**When selecting a Batch in the Dashboard and then clicking the ‘Load’ button, the following error appears, “There are no loans to analyze in batch”. What does this mean?**

First check in the ‘Manage Batches’ tab, ‘Edit Batch’ sub tab to ensure that there are loans in the database assigned to the batch. If not, conduct a reload of the most recent loans data.

If there are loans attached to the batch giving the error, this indicates that for some reason the connection has been lost between the Loan Portal’s front end and back end. In order to correct this, the server which is hosting the Loan Portal needs to be restarted.

**Is there auditing functionality in the LP?**

There is no in-built auditing functionality. An investor and company using the platform are free to develop and integrate any auditing functionality required and ideally share such developments with the broader LP community.

**What happens when the definitions need to be changed based on a company’s business model?**

A company can edit the standard calculations and definitions implemented in the LP to best reflect their business model. This should be done with full transparency to the investors to ensure correct and effective interpretations.

**Can a company cherry pick and influence numbers on the LP?**

Since the company sets up the data input and can edit the standard calculations as provided in the open source software, companies can indeed cherry pick and influence numbers. The onus is on the company to set and define the definitions and data used in the LP with their investors. The investors can then use the platform to monitor the development of the portfolio and through that, ask for clarifications on any data or definitions used. The LP does not replace the need for detailed periodic reporting on the part of the company.