MVP BLUEPRINT PROPOSAL

For Smart CFO Solution

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Version Control

Version	Date	Author	Status	Changes
V1.0	08/20/2024	Business Analyst	Initiate	First Draft
V1.1	08/24/2024	Business Advisor/ PM/ Dev	Review	Revise user scenario, system flow, technology stack
V2.0	08/28/2024	Business Analyst	Initiate	Second Draft
V2.1	09/15/2024	Business Advisor/ PM	Review	Add in financial analytics functions, automation, modify user case
V3.0	09/20/2024	Business Analyst	Initiate	Third Draft
V3.0	09/25/2024	Business Advisor/ PM	Approved	
V3.1	09/28/2024	Project Sponsor	Review	Revise project Timelines; final Review
V4.0	10/3/2024	Business Analyst	Initiate	Final Version
V4.0	10/5/2024	Senior Business Advisor/ PM/ Project Sponsor	Approved	Final Version

Table of Abbreviations

Abbreviation	Definition
SMEs	Small and medium-sized enterprises
SCFO	Smart CFO
CF	Cash Flow
FO	Finance Officer
AR	Account Receivables
AP	Account Payables
CFO	Chief Financial Officer

Table of Glossary

Term	Definition
Dunning	The process of business owners communicating with customers to collect money owed for goods or services provided
DPO	Days payable outstanding - A financial ratio that indicates the average time (in days) that a company takes to pay its bills and invoices to its trade creditors
DSO	Days sales outstanding - An accounting metric that measures the average number of days it takes a business to receive payment for goods and services purchased on credit

1. Introduction

1.1. Vision and objectives

In the complex world of business, where every decision carries financial implications, the importance of robust financial reporting cannot be overstated. This practice is not just routine exercise; it is a crucial tool that enables stakeholders to comprehend a company's financial health, make informed decisions, and ensure accountability. Industry research shines a spotlight on the importance of preparing for the unexpected. 90% of senior finance leaders agree that their key task in 2024 is to prepare their businesses for unforeseen events. However, achieving pinpoint accuracy in an environment riddled with uncertainties can feel like chasing a moving target. From fluctuating economic conditions to evolving consumer preferences, the factors influencing a company's financial performance are constantly in flux. This places the CFO in a pivotal position to make enterprise-level decisions. As digitization set in, the enterprise began to look to the CFO for enterprise-level guidance. The CFO soon assumed a dominating presence across the enterprise and played their steering role in making the strategic direction. To ease their world load and burden, a reliable financial reporting tool is necessary to assist CFO to make important choices, plan spending wisely, and keep the company running smoothly in the long run. Being an insider in this domain and understanding the need as well as the challenges of CFO to drive a healthy financial operation for an enterprise, Smart CFO Solutions will develop a comprehensive financial reporting platform built in intelligent analytics and robotic process automation (RPA) to integrate existing software and IT systems, enabling the automation and acceleration of multiple financial reports such as cashflow statement, budget and financial planning. The platform presents a visually appealing dashboard for real-time presentation of critical financial metrics and actionable insights for real-time decision making.

1.2. Problem statement

The following are recognized as the top challenges for SMEs to encounter with:

- **Big and Unclean Data:** Small and medium-sized enterprises (SMEs) often grow rapidly, requiring strong financial management to support their expansion. As they scale, their financial transactions become more complex, and they manage larger volumes of data. They

need a system that can manage this complexity and provide real-time insights into cash flow, receivables, payables, and overall financial health.

- **Lack of Effective and Efficiency due to the lack of digitalization and automation:** Traditional financial management methods present several challenges for SMEs. Manual data entry and paper-based processes are inefficient, time-consuming, and prone to errors, leading to inaccurate financial records. This can result in poor financial decision-making and compliance issues. Relying on outdated methods also means SMEs often lack tools to automate routine tasks like invoicing, payroll, and expense tracking. This not only wastes valuable time but also diverts resources from core business activities. Without automation, financial processes can be delayed, affecting cash flow and overall financial health. Additionally, traditional methods often lack real-time financial insights, making it difficult for SMEs to monitor cash flow, receivables, and payables effectively. Without real-time data, they cannot respond promptly to financial challenges and opportunities.
- **Limited or Inconsistent Cashflow:** Effective cash flow management is crucial for SMEs, as it impacts their ability to meet daily expenses, repay debts, and invest in growth opportunities. Traditional methods often do not provide the tools needed to forecast cash flow accurately, leading to potential cash shortages and financial instability. SMEs need to manage their cash flow efficiently to ensure they have enough liquidity for operational costs like salaries, rent, and utilities. Poor cash flow management can delay payments to suppliers, damaging vendor relationships and disrupting the supply chain.
- **Limited investment for digital technology and financial literacy:** Moreover, traditional financial management methods do not scale well as businesses grow. As SMEs expand, they face more transactions and complexity, which traditional methods cannot handle efficiently. This can leave SMEs struggling to manage their finances, potentially stalling their growth. Limited access to external financing and a lack of financial literacy makes things even harder, as SMEs may find it challenging to implement more advanced financial strategies.

1.3. Target audience

Small and medium-sized enterprises (SMEs) are the target audience of Smart CFO, hereinafter referred to as SCFO, due to their unique needs and constraints. These companies often operate with limited financial resources and lack the extensive infrastructure of larger corporations, making it essential for them to adopt cost-effective solutions that enhance efficiency and accuracy. SMEs

require a financial management system that can automate routine tasks, provide real-time financial insights, and ensure compliance with regulatory requirements. The system should be scalable to accommodate growth and adaptable to the evolving needs of the business. Additionally, the system needs to have user-friendly interfaces that do not require extensive financial expertise, allowing business owners and employees to manage finances effectively.

The purpose of this MVP is to ease the burden of SMEs by enabling them to streamline their operations, improve decision-making, and achieve sustainable growth.

1.4. MVP Scope-Defining Methodology

Methodology: Following a lean start-up strategy, this MVP proposal aims to build the predetermined set of features and functionalities which are prioritized upon its initial launch. It serves as a guideline that helps align the project's goals with the target audience's needs. The criteria are set to mitigate these challenges based on the following:

- Core Features: The necessary and the most low-risk functions
- Time Efficiency: To shorten the time between conceiving and launching a feature, as well as fastening the GTM implementation
- Cost Management: To reduce the overall expenses by zeroing in on the necessary features, allowing wise allocation of the initial investment.
- Risk Mitigation: To reduce uncertainties and set clear expectations for the team and stakeholders, thus minimizing the risks associated with product development.
- Supporting Document: This MVP is composed based on the documents provided by SCFO including The Business Plan; Ideation Prototype and various meetings with the entrepreneurs

1.5. Risk and Mitigation

We foresee the following risks which are common in any implementation process, however these risks are technically addressable in the later phases of the project. Any change requires more workload and effort out of the scope of this MVP resulting in additional cost will be borne by the Client.

- Modifications in project scope, product features or product design by the Client.
- Complications in integrations with third-party software, plugins, cloud, etc.
- Unavailability of requisite third-party libraries or errors in their implementations.
- Force majeure or unseen circumstances that are beyond our control.

1.6. Limitation

The developed solution will be solely based on information shared from the Client. Since this information is limited at this time, any solution proposed now may need changes at the time of implementation.

- Open-source software will be used where available in the interest of time, budget, and effort.
- Hardware design & development will be kept at a minimum in the interest of time.
- The focus is the design and development of a working MVP. Advanced development practices like engineering optimizations, integration with a third-party software, deployment of advanced software practices, data analysis, artificial intelligence etc… will not be considered marketing & sales related optimizations, content development, graphical assets development, etc. are not considered.
- Development of any textual or graphical content, mobile apps, or related assets as part of design & development.

1.7. MVP Scope

Considering the scope defining methodology, aligning with lean start up strategy and business goals, This MVP will offer the following functions:

1.7.1. Cash flow plan management

Cash flow management is one of the key tasks of an enterprise financial management system. This MVP brings a solution to replace traditional methods which are heavily based on using spreadsheets files to manually collect and aggregate data. It plays as a data center which can automatically integrate data from all related financial and treasury modules of the company in conjunction with unrecognized Cash flow plan submitted by Functional Departments to create a combined plan for whole company. After being approved at the company level, the approved flow plan will be sent back to the Functional Department for tracking. CFO and Finance Officer can have a view of actual cash flow of the company and compare with the plan with built in intelligence dashboards.

1.7.2. Receivables and payables management

The system allows the integration with various enterprise solutions for data consolidation and analysis, coping with AI powered model to provide the user with comprehensive overview of Client's liabilities and receivables. As the results, it helps CFO to make the best informed financial decision for their company.

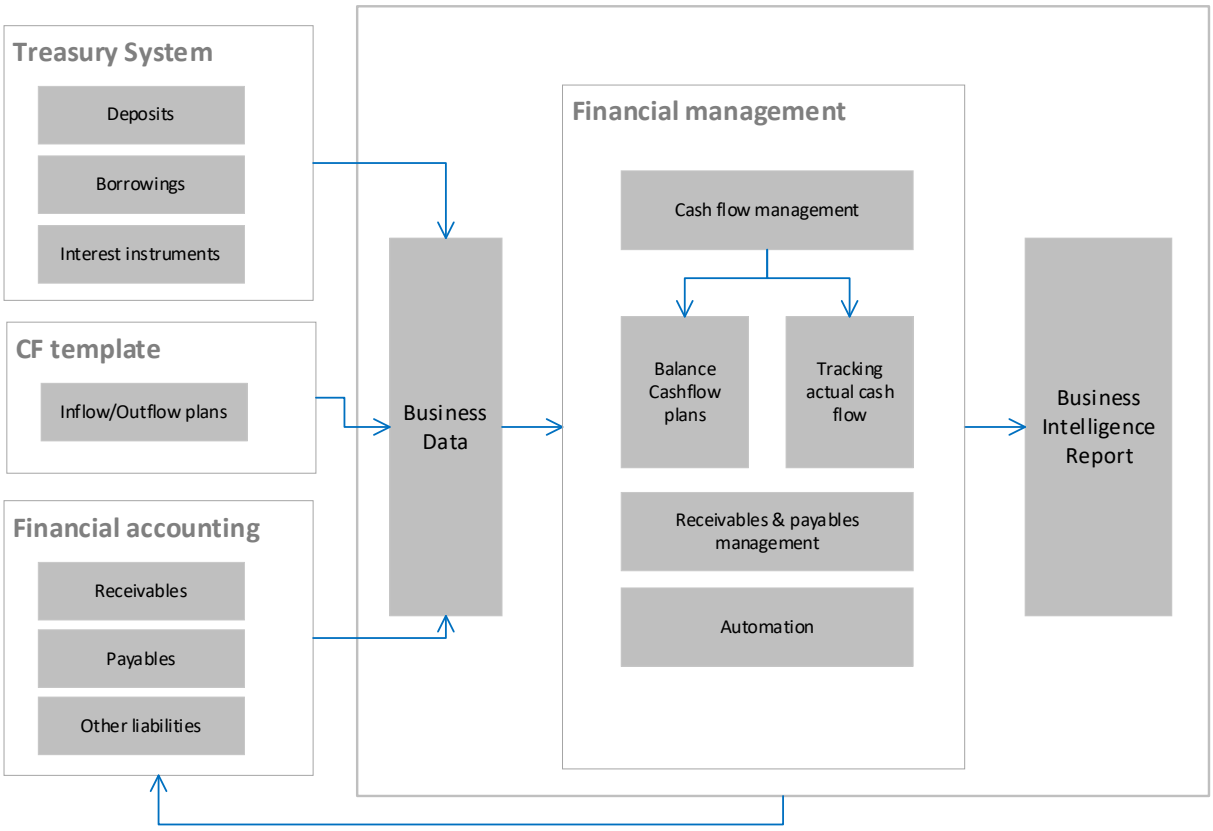
1.7.3. Automation

AR and AP automation are a digitized form of AR and AP system to liberate employees from the drudgery of manual accounting. The automation process can start with invoice crafting process, collection, payment monitoring ...Under the scope of this MVP, the system will only cover the sending of dunning letters and monitoring due payments.

2. System Architecture

2.1. System Overview

The following system diagram follows a best of breed strategy offering its value proposition on top and in combination with any enterprise system platform to provide the end user with the best smooth and user experience during their day-to-day business transaction.



2.2. User roles and responsibilities

This MVP system includes 4 main actors to interact with and present the complete user scenario in the field of cashflow management. They have their own accounts which require username and password to sign in. Actors can perform the following actions in accordance with their assigned task and authority.

Actor name	Description	Features
Super Admin	This is the administration account nominated by SCFO. This actor/ account has full authority to manage the whole system's functionality as client.	Staff/ User Account Management
Finance Officer		CF Template Management

Actor name	Description	Features
	The actor is the key role in the system who is authorized to use most of the functions of the system	CF Data Management
		Receivable Management
		Payable Management
		Payment Automation
		Automatic Dunning Letter
		Balance Portal Configuration
Functional Department/ Staff	The Actor who is responsible for any data entry for financial purpose	CF Data Input
CFO	The Actor with approval role for any financial decision of the client. This actor is authorized to use all functions of This MVP to access financial data at the granular level	General Dashboard
		Receivable Management
		Payable Management
		Payment Approval
		Dunning Letter Approval

2.3. Functional requirements

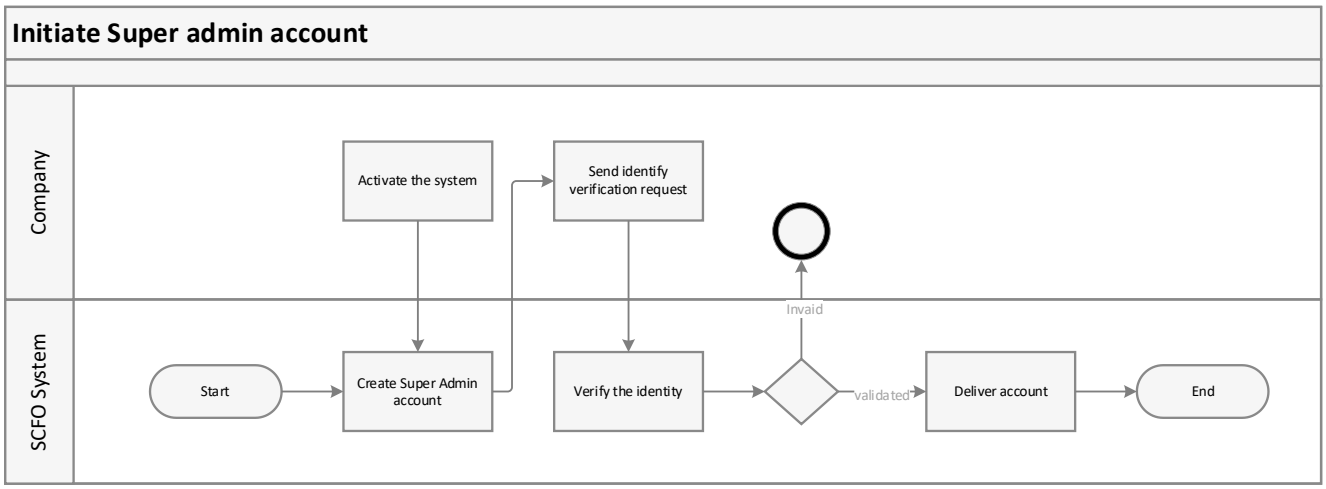
2.3.1. General configuration

2.3.1.1. Use Case 01: Super Admin - Initiate admin account

a. General information

The platform is operated by the assumption that SCFO succeeds in acquiring their first customer. As the result, the customer will nominate their Staff as the system admin to create the admin account on behalf of their organization. This admin account will be the main account and perform all system actions as briefly described at “2.2. User roles and responsibilities”.

b. Workflow



c. Use case description

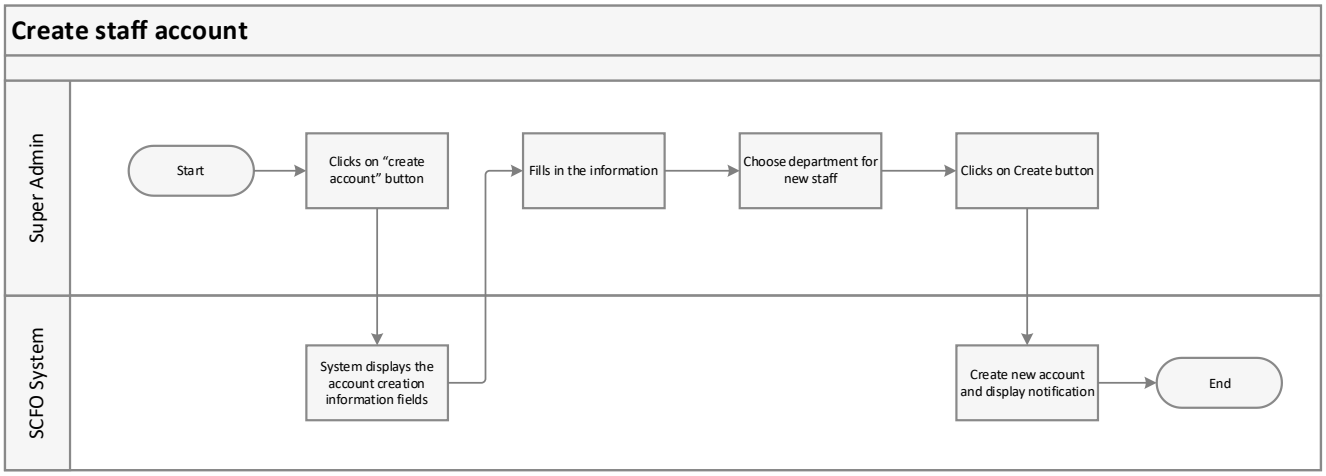
Use case name	Initiate Super Admin Account
Description	After the contract has been signed by both parties, The authorized Super Admin will receive log in request from the system to activate and validate the account in the system the super admin
Primary Actor(s)	Super Admin
Trigger	Super Admin activates the system
Pre-Condition(s)	- Both organizations have finished the required documents and signing the contract - Super Admin account has been created
Basic Flow	1. Super Admin activates the system. Super Admin sends the identity verification request by signature, certificate authority, … etc. The System verifies the information of the organization representative in the request. 2. The System delivers the account information to Super Admin.
Post-Condition(s)	Super Admin account is created

2.3.1.2. Use case 02: Super Admin - Create Staff account

a. General information

Super Admin account could add new staff/ business user accounts into the system to perform their company tasks. The quantity of staff accounts must be aligned with the number of user license signed by SCFO and its client.

b. Workflow



c. Use case description

Use case name	Create staff account
Description	After receiving request from a staff, Super Admin would add a new account with staff information
Primary Actor(s)	Super Admin
Trigger	Super Admin clicks on "Create account" button
Pre-Condition(s)	Super Admin has signed in and received an account creation request
Basic Flow	1. Super Admin clicks on "Create account" button The system displays the creation screen with staff information fields 2. Super Admin fills in the information 3. Super Admin chooses department for the staff 4. Super Admin clicks on the "Create account" button

	5. System validates fields and notifies that new account is successfully created
Post-Condition(s)	Staff could use the newly created account to sign in

2.3.1.3. Use case 03: Super Admin - Update account status

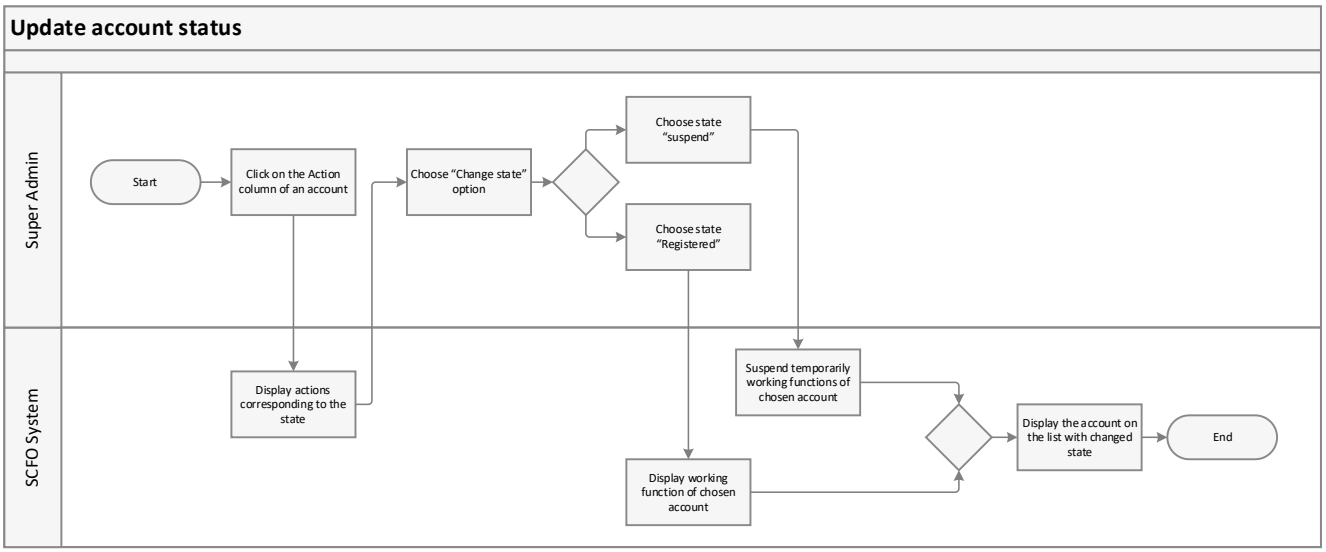
a. General Information

Super Admin could update the chart of staff account status in line with their work status.

If a staff account is marked with status "Suspended", this account could be reactivated and the slot for account creation of company is still occupied.

If a staff account is marked with status "Deactivated", this account couldn't be reactivated and the slot for account creation of company is freed, which allows Super Admin to create a new one.

b. Workflow



c. Use case description

Use case name	Change work status of a staff account
Description	Super Admin changes the state of a staff account according to their working status
Primary Actor(s)	Super Admin
Trigger	Super Admin clicks on Action column of an account

Pre-Condition(s)	- Super Admin has signed in - The chosen account must be in “Working” status
Basic Flow	1. Super Admin clicks on Action column of an account 2. The system displays actions corresponding to the state 3. Super Admin chooses “Change state” option 4. Super Admin chooses state “Suspend” 5. System suspends the working functions of the account until Super Admin reactivates them 6. The system displays the account on the list with changed state
Post-Condition(s)	Staff could use the newly created account to sign in

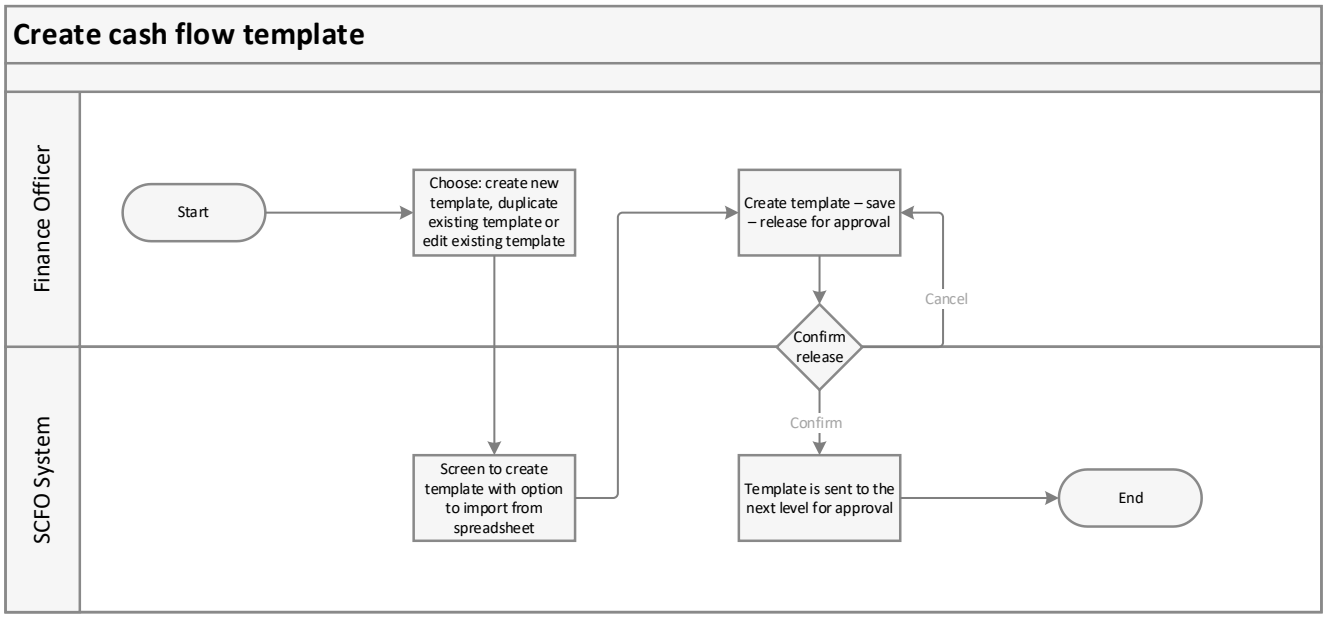
2.3.2. Cash flow management

2.3.2.1. Use case 04: Finance Officer - Create CF template

a. General information

Finance Officer can create cash flow template by uploading the new template or customizing their existing template to furnish the change of requirement

b. Workflow



c. Use case description

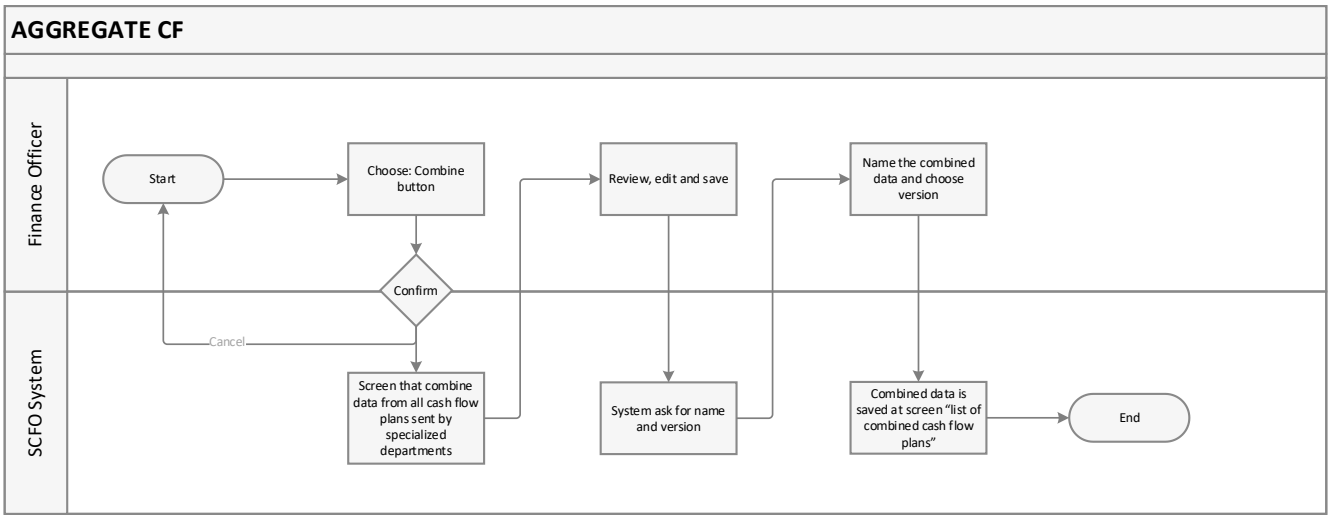
Use case name	Create cash flow template
Description	Finance Officer can create a cash flow template for the Functional Departments
Primary Actor(s)	Finance Officer
Trigger	Finance Officer selects "Create template"
Pre-Condition(s)	Finance Officer has signed in .
Basic Flow	1. Finance Officer clicks on "Create template" button 2. FO selects upload option to import template from spread sheet file 3. Finance Officer opts to save or release for approval 4. Finance Officer opts to save the template
Alternative Flow	4a1. If the Finance Officer chooses to release for approval, the system will pop up for confirmation
Post-Condition(s)	CF Statement Template will be uploaded or modified per user's need as the final version for further circulation once The system will give notification that template has been saved. The system gives notification that the template has been released for approval and sends the template to the next level for approval.
Note	Finance Officer cannot edit Cash flow template sent for approval unless it is returned for modification by CFO

2.3.2.2. Use case 05: Finance Officer - Aggregate CF

a. General information:

Finance Officer can aggregate data from cash flow plans sent by the Functional Department

b. Workflow



c. Use case description

Use case name	Aggregate cash flow plans
Description	Finance Officer reviews cash flow plans sent by the Functional Department and aggregate data from these plans
Primary Actor(s)	Finance Officer
Trigger	Finance Officer select "Combine" button
Pre-Condition(s)	- Functional department has sent cash flow plans to Finance Officer
Basic Flow	1. The Finance Officer reviews and selects cash flow plans that need to be merged. 2. The Finance Officer selected combine button to combine data from all selected cash flow plans. The system displays combining data and allows the Finance Officer to check and edit combined data. 3. The Finance Officer saves the combined data. System shows a popup to ask Finance Officer to name the combined data and choose the version of it. 4. The Finance Officer names the combined template and save it .

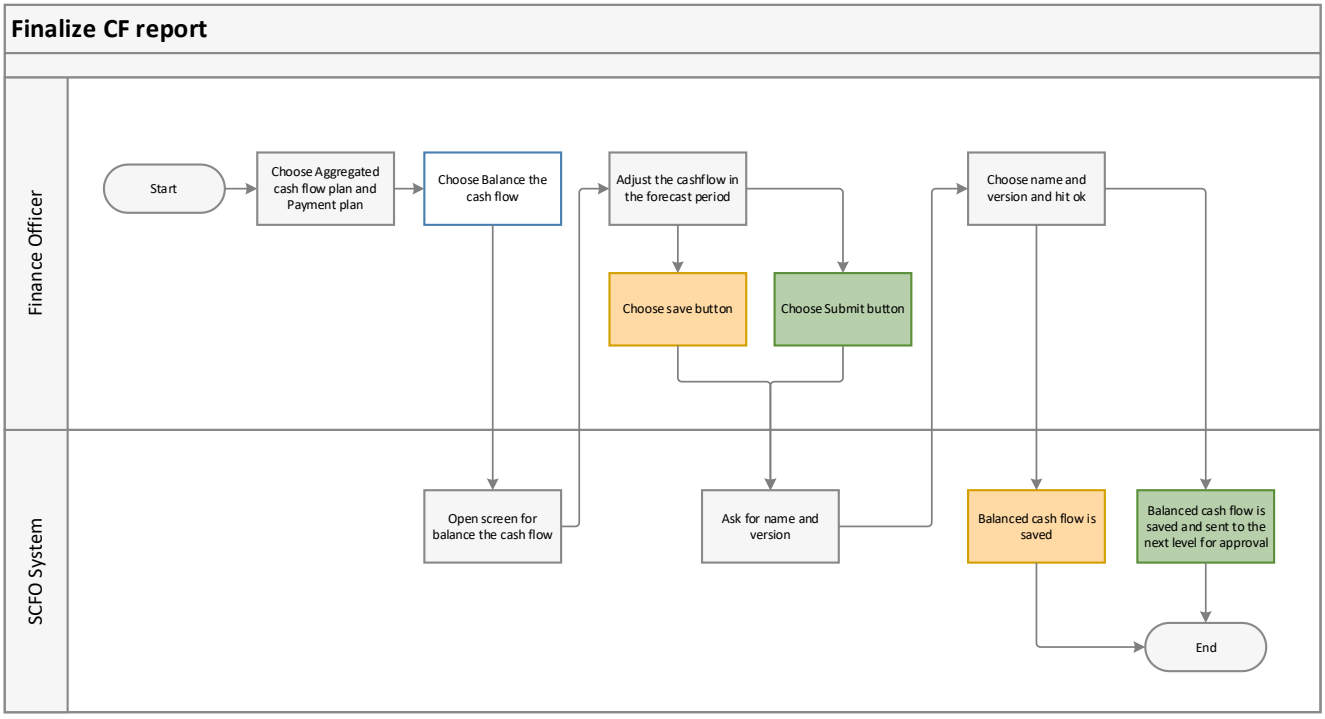
Post-Condition(s)	Data from selected cash flow plans is aggregated and final cash flow template is saved

2.3.2.3. Use case 06: Finalize CF Statement

a. General information

The Finance Officer uses this function to finalize the forecast cash flow statements and submit them to the CFO for approval

b. Workflow



c. Use case description

Use case name	Finalize CF report.
Description	The Finance Officer uses this function to combine aggregated CF at use case number 05 with payment plan from accounting system and address surplus or shortage of cash in the next period.
Primary Actor(s)	Finance Officer
Trigger	The Finance Officer selects “Balance” button.

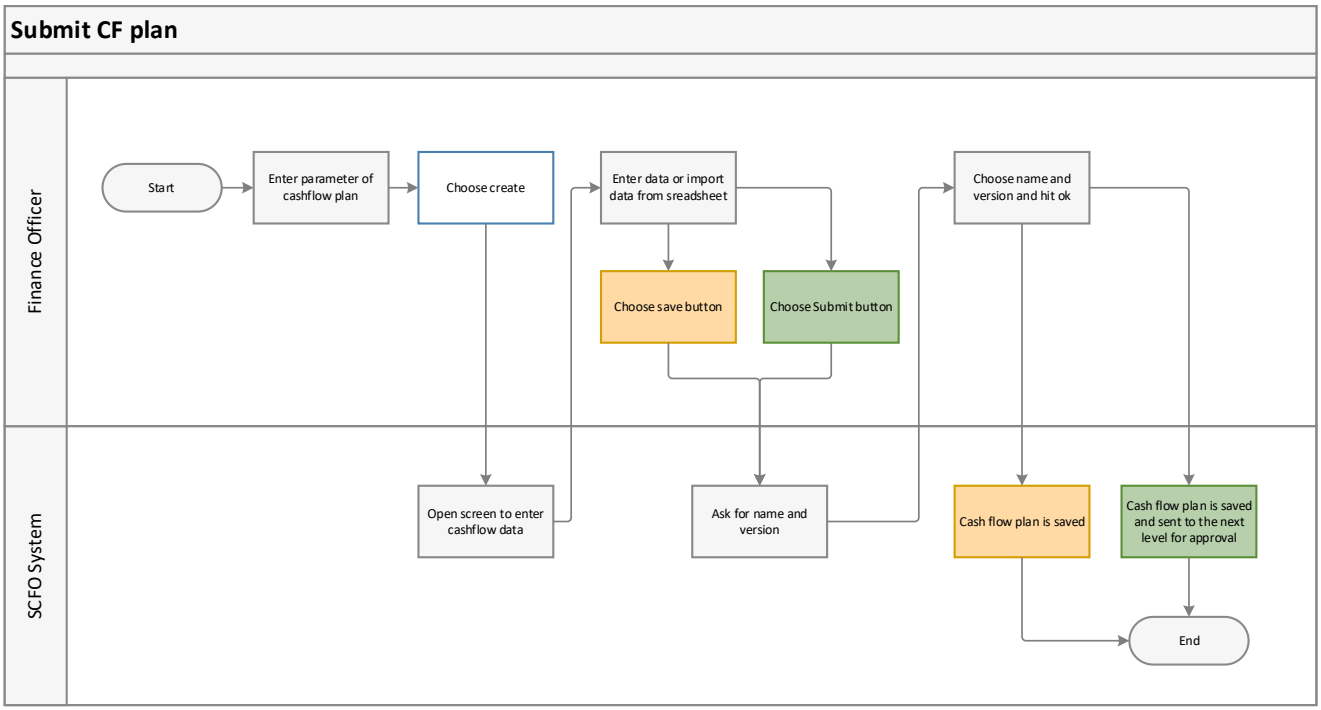
Pre-Condition(s)	The Finance Officer has had least an aggregated CF plan for the planning period.
Basic Flow	1. The Finance Officer selects an aggregated cash flow plan in use case 05 to balance. 2. The system displays screen with aggregated CF plan and payment plans for the planning period. 3. The Finance Officer can o Prioritize the certainty level of each component of the cash flow plan. o Approve or disapprove each component of the cash flow plan. o Adjust each component of the cash flow plan at separate fields. o Propose solutions for balancing cash deficits or managing surplus cash. 4. The Finance Officer selects "Save" button
Alternative flow	1.1.The Finance Officer selects "Submit" button for approval.
Post-Condition(s)	Final CF plan is saved in the CF list with the status "waiting for approval" CFO received the final CF plan

2.3.2.4. Use case 07: Functional Dept- Submit CF plan

d. General information

Functional Department post the data into the Cash flow plan template

e. Workflow



f. Use case description

Use case name	Submit CF plan
Description	The Functional Department creates the CF plan by entering data into the final template created by the Finance Officer and submits the plan
Primary Actor(s)	Functional Department
Trigger	Functional Department selects “Create” button
Pre-Condition(s)	A Cash flow plan template has been released by the Finance Officer.
Basic Flow	1. Functional Department select “create” button to begin 2. Functional Department posts their data into the released template 3. Functional Department names the template and save the filled CF Template . 4. Functional Department submits the saved template for intermediate approval

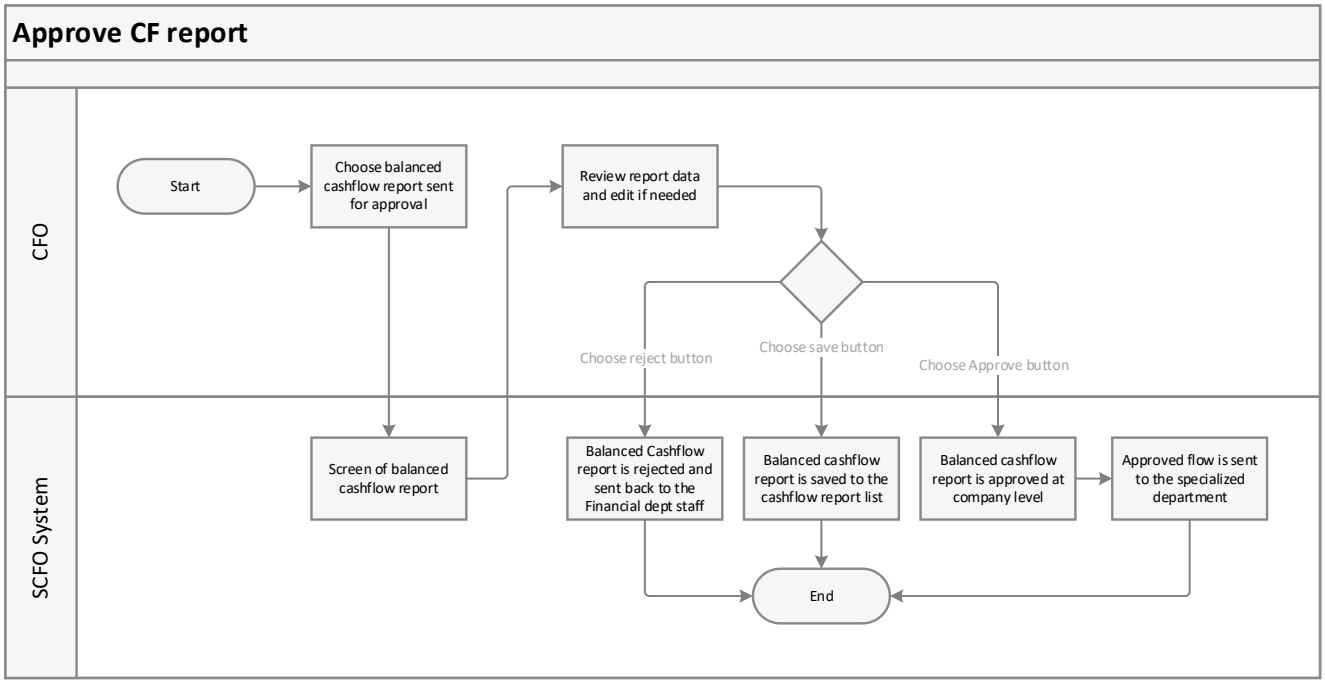
Alternative flow	3a1. Functional Department selects "Save" button to save the current work. Functional Department names its current work *<Continue at step 4>*
Post-Condition(s)	The filled CF template is sent to the finance officer for intermediate approval

2.3.2.5. Use case 08: CFO - Approve CF report

a. General information

Final CF Plan will be sent to CFO for final approval. At this level, CFO can drill down to the granular level of CF template for his next actions including rejecting or approving the CF Plan .

b. Workflow



c. Use case description

Use case name	Approve CF statement
Description	The CFO can review edit, approve, or reject the submitted plan.
Primary Actor(s)	CFO
Trigger	Choose reject/save/approve button

Pre-Condition(s)	Final CF plan has been sent to CFO for approval
Basic Flow	1. CFO chooses a balanced cash flow plan to review 2. CFO can edit Cash flow plan if necessary 3. CFO selects "Approve" button to approve the Cash flow report at the company level.
Alternative Flow	1. 3a1. CFO selects "Save" button to save his/her current editing on the plan *<continue to step 4>*. System has a popup screen to ask for confirmation 3a2. CFO selects "Reject" button to reject the final report and sends it back to the Finance Officer. System has notification for each action accordingly *<continue to step 4>*
Post-Condition(s)	The Cash flow report is approved at the company level. Final approved CF is sent to the Functional Department for execution. The Cash Flow is returned to finance officer for adjustment per CFO's suggestion

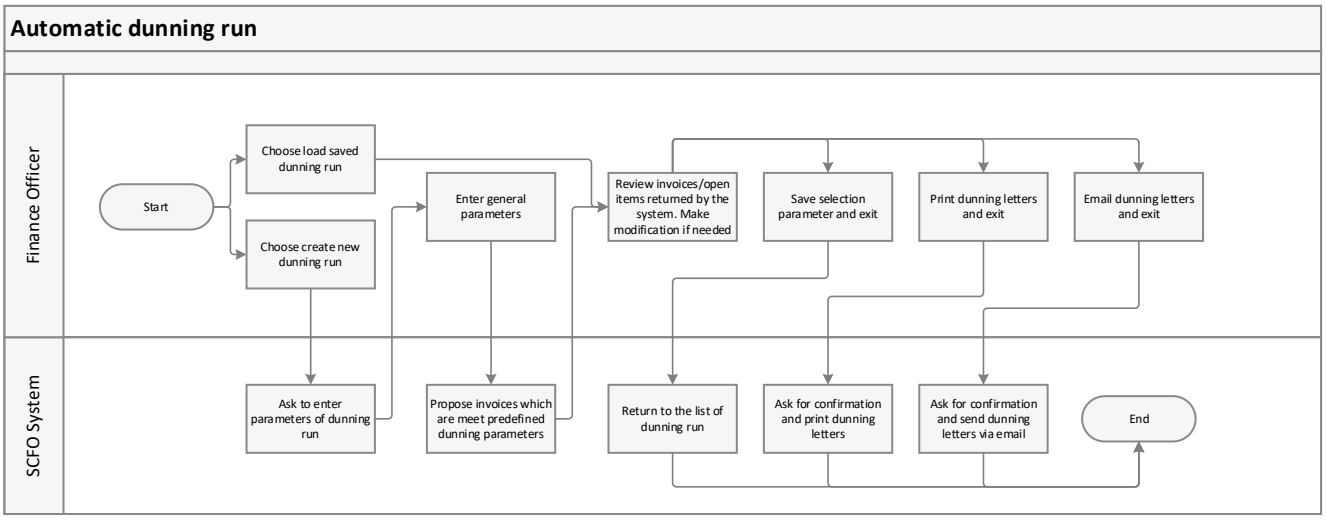
2.3.3. Automation

2.3.3.1. Use case 09: Finance Officer - Automatic dunning run

a. General information

General information: In case customers do not pay their invoices on time, dunning runs will be utilized to send payment reminders of outstanding debts.

b. Workflow



c. Use case description

Use case name	Automatic dunning run
Description	User can use this function to auto-send payment reminders of outstanding debts to customers
Primary Actor(s)	Finance Officer
Trigger	Select Dunning Run
Pre-Condition(s)	A dunning procedure has been configured Customers have been assigned with Dunning procedure at customer master data.
Basic Flow	1. User selects dunning run. The system opens a dunning run list that displays saved dunning run. 2. User selects “create new” button to create a new dunning run. System opens new window. At the “Status” field , user can have overview of the latest status of dunning run. User has options to choose whether to run dunning automatically or manually. User enters name of dunning run at identification field. 3. User selects tab Parameters to enter general parameters

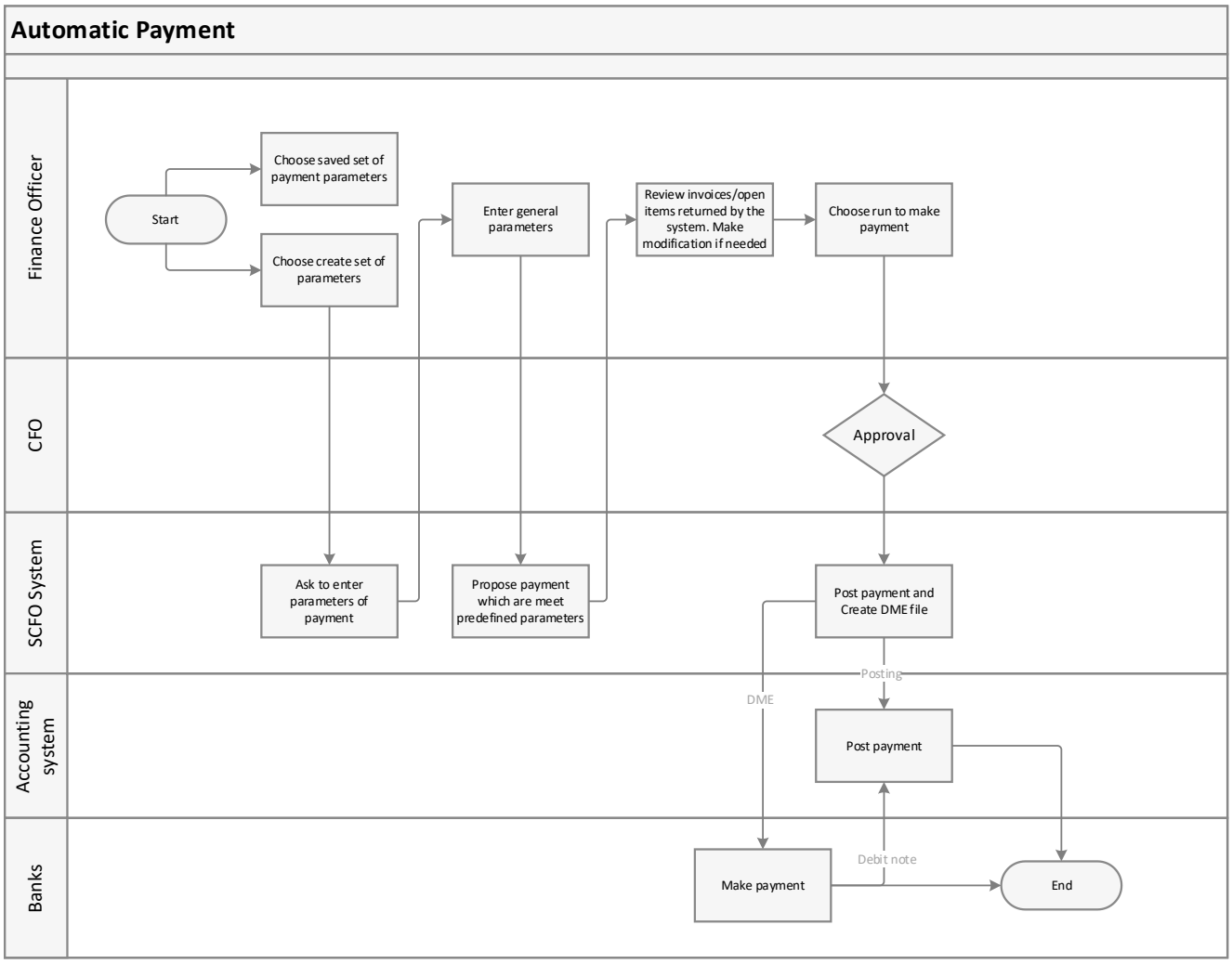
	- Date of dunning: This date is used to calculate the number of days an invoice is overdue. User leaves it blank if automatic dunning run is selected at status tab. - Customer range: Customer that will be sent dunning in this dunning run. 4. User reviews all invoices which are to be shown on dunning letters in "Proposed" tab. User modifies details if needed. User chooses next to go to the next step. 5. User selects "status" tab then selects "dunning printout" to execute dunning run. User selects "Email dunning letters and exit" from drop down menu at "Printout" field, then selects "print" to send dunning letters via email to customers *) If automatic is selected at Dunning run recurrence field, dunning letter will be automatically sent to customers using procedure configured in dunning procedure
Alternative flow	2a1. User load a saved dunning run to edit. *<continues to step 4>*
Alternative flow	5a1. User can select other options other than "Email dunning letters and exit" at printout field: - Save selection parameter and exit - Print dunning letters and exit
Post-Condition(s)	Dunning letters are sent to target customers Status is updated in the "Status" tab.

2.3.3.2. Use case 10: Finance Officer - Execute Payment automation

a. General information:

User can use this function to make payment automatically to the suppliers.

b. Workflow



c. Use case description

Use case name	Automatic payments
Description	Users use this function to automatically make payment to the suppliers on time.
Primary Actor(s)	Finance Officer
Trigger	Select Automatic payment
Pre-Condition(s)	There are open transactions waiting for payment with specified due date.
Basic Flow	1. User selects automatic payment

	2. User creates a new set of parameters for automatic payment run 3. User enters required parameters to execute the payment as mentioned below: As the result, the system returns a list of all the open items due for payment in the "Proposals" tab: - Run date: the date when the payment is executed/ completed - Payment Identification: a unique code attached for a specific payment or group of payment - Posting Date: Specifies the date on which a payment item was posted to the account .Supplier code - Document entry date. - Payment Due Date. - Payment Method: SEPA bank transfer, check, are to be included in the payment program. - Free Selection: the value for the field for additional selection conditions. 4. User can modify proposed payment in the "Proposals" tab such as editing payment details or change payment methods…. 5. User selects "Schedule payment" then selects "Make payment immediately" or specifies certain date to execute. User Select "Schedule" to run automatic payment run.
Alternative flow	3a1. User can load a saved set of parameters for automatic payment. *<continues to step 4.>*
Post-Condition(s)	Payment is posted to the accounting system. The system creates DME files and send to the bank Payment is made to the suppliers.

2.4. Analytic Dashboard

Financial reporting is important for management to make informed business decisions based on facts about the company's financial health. Retrieving, organizing, and analyzing data from financial

management solutions provides meaningful insight into a company's operational performance and point-in-time financial situation. The system is capable of providing multidimensional reporting with self-service reporting and data visualization capabilities. Companies can further improve their financial performance by giving users access to real-time information

Audience: Audience who can access the financial report of the company varies depending on the company policy. The most common audience are shareholders, authorized manager/leader, and finance officers

Data Source: Data comes from different sources as long as it provides related data to compute the financial conditions. The most common source is ERP system, Purchasing Solution, Finance and Accounting System, Bank gateway... However, within the scope of this MVP, the sample of data is simulated based on the similar patterns of data from those mentioned sources.

Key Indicator

2.4.1. AR/ AP Analytics

2.4.1.1. General Information

The system is capable of providing all important payable/receivable management KPIs such as Days payable/sales outstanding; AR/AP Aging,... This is a central entry point for 360-degree view of the Payables/Receivables status.

2.4.1.2. Workflow

OBJ

2.4.1.3. Dashboard Accessibility Description

Dashboard Accessibility	Description
	▪ User opens app AR/AP analytics ▪ User enters required parameter and select Go ▪ The system returns a dashboard screen filled with cards such as: Days payable/sales outstanding; AR/AP Aging, posted invoices, posted invoices in Current period, …. ▪ User selects one of the dashboard cards to see more details

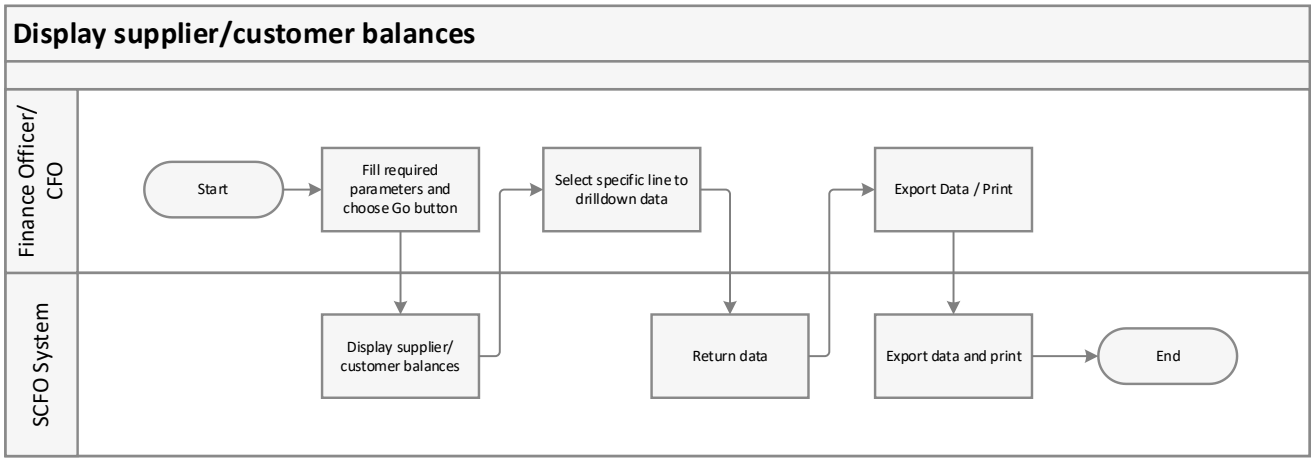
	▪ The system shows chart with detailed data ▪ User selects the options provided to change the filter criteria and chart type options. ▪ User might export data. ▪ User chooses home button to navigate back to the home page

2.4.2. Display supplier/customer balances

2.4.2.1. General Information

The system can display supplier/customer balances and compare sales. Users can find debits, credits, and balances by fiscal year and supplier/customer. The system can do further analysis of the amounts by displaying all related transactions items. To meet the users' further needs, the system has functions to hide, unhide, and sort columns.

2.4.2.2. Workflow



2.4.2.3. Dashboard Accessibility Description

Dashboard Accessibility	Description
	▪ User enters required parameter such as: Fiscal year, Supplier/customer, comparison fiscal year… and select Go ▪ The system returns the balances for selected supplier/customer

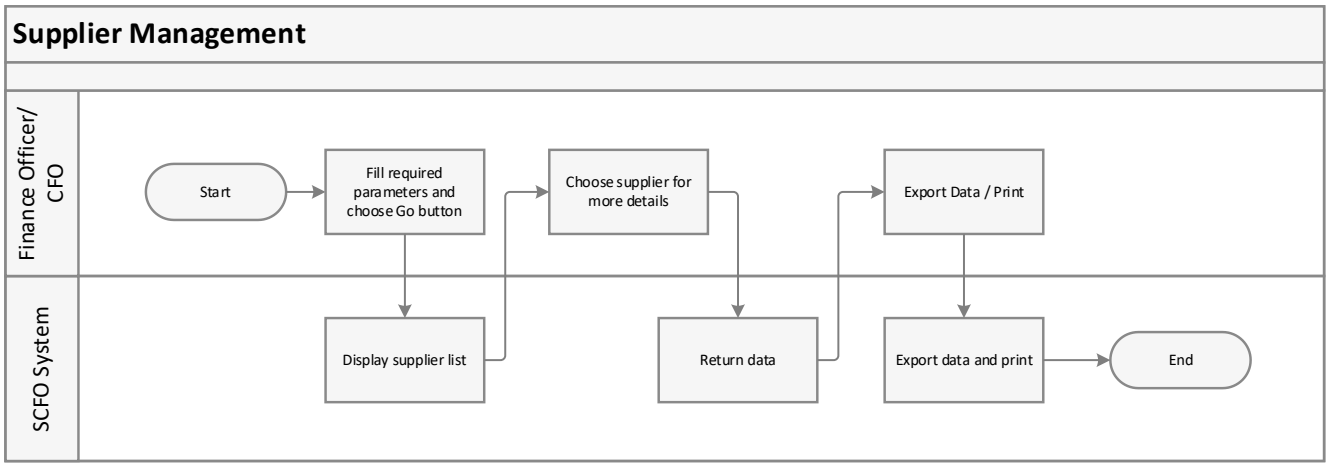
	▪ User might export data to spreadsheet

2.4.3. Supplier Management

2.4.3.1. General Information

The system shows a list of suppliers. User can use the search filter to create custom lists of suppliers and view fundamental business data of all suppliers such as contact details of the suppliers, the bank details and payment methods applied to the suppliers....

2.4.3.2. Workflow



2.4.3.3. Dashboard Accessibility Description

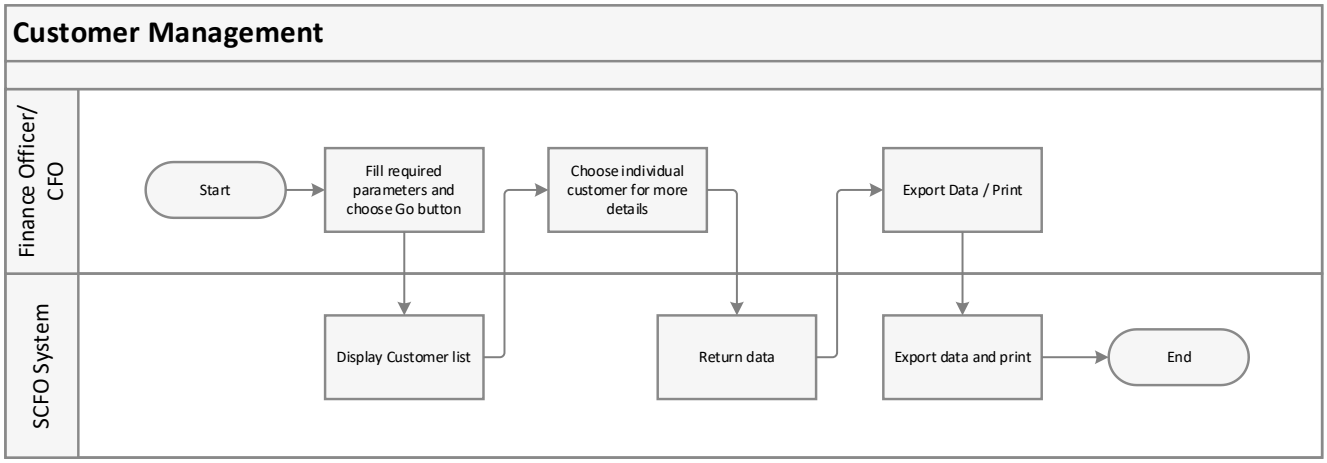
Dashboard Accessibility	Description
	▪ User enters required parameter such as: Supplier, Balances (Open/Clear/None/All), Supplier group, Supplier type… ▪ The system displays a list of filtered suppliers with current balances. ▪ User selects supplier to assess more details of supplier which includes supplier master data information such as detailed information, banking details, payment methods.... ▪ User might export data to spreadsheet.

2.4.4. Customer Management

2.4.4.1. General Information

Users can use this function to see fundamental business data of all customers in one place and to check in a simple and efficient way so that no key data is missing.

2.4.4.2. Workflow



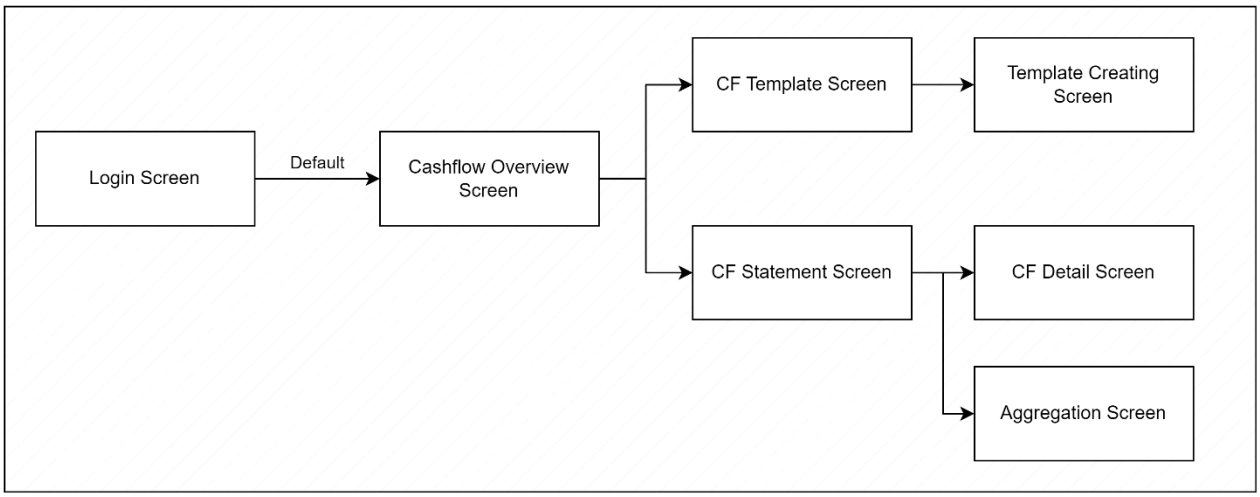
2.4.4.3. Dashboard Accessibility *Description*

Dashboard Accessibility	Description
	▪ User enters required parameters such as: Customer, Balances (Open/Clear/None/All), Customer group, Customer type… ▪ The system returns a list of filtered Customer with current balances. ▪ User selects a customer to assess more details of this customer which includes customer master data information such as detailed information, banking details, dunning procedure, invoice information.... ▪ User might export data to spreadsheet.

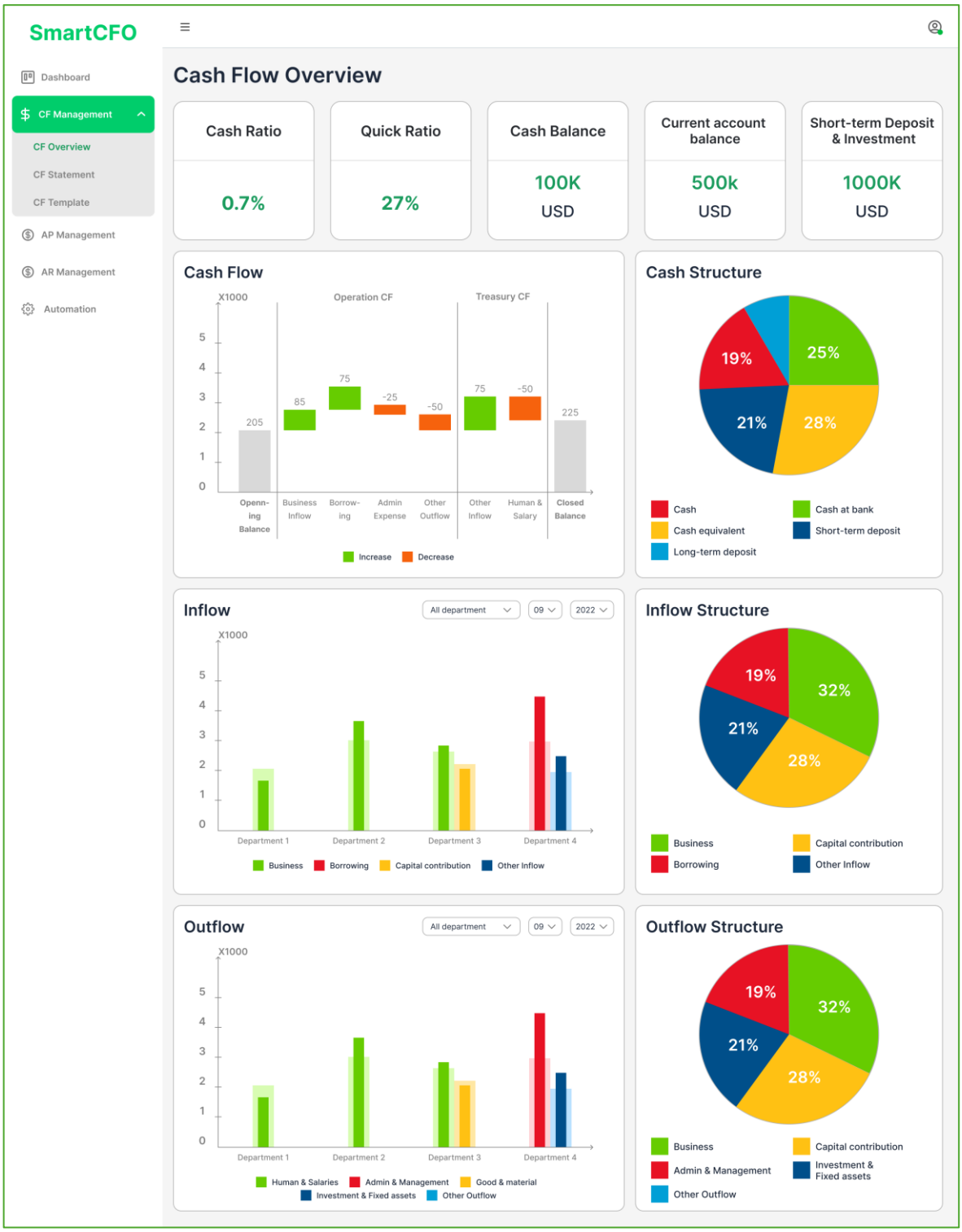
2.5. System Mockups

2.5.1. Cashflow features

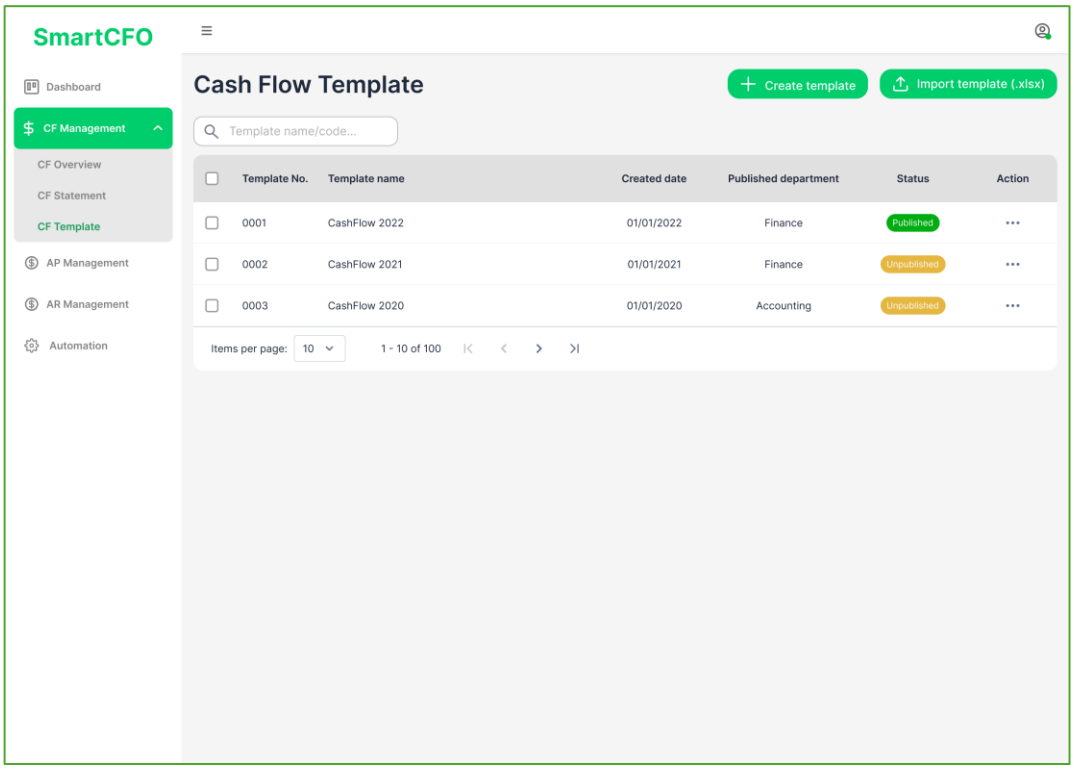
2.5.1.1. Screen Flow



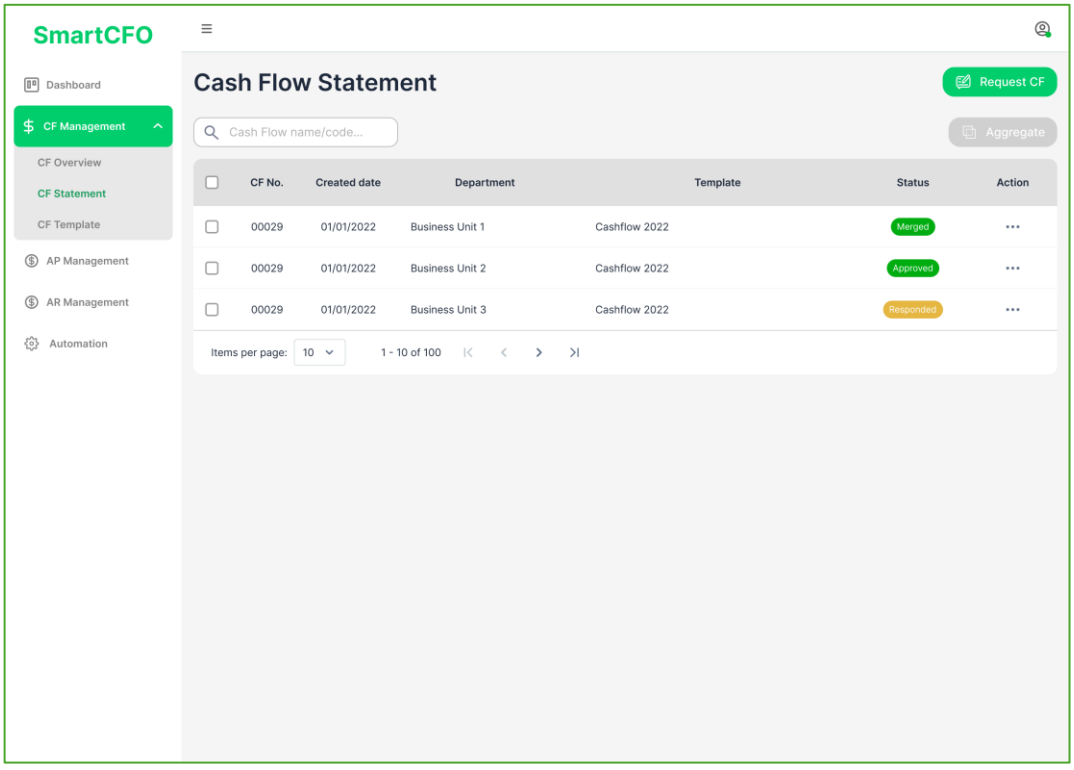
2.5.1.2. Cash Flow Overview



2.5.1.3. CF Template Management Screen

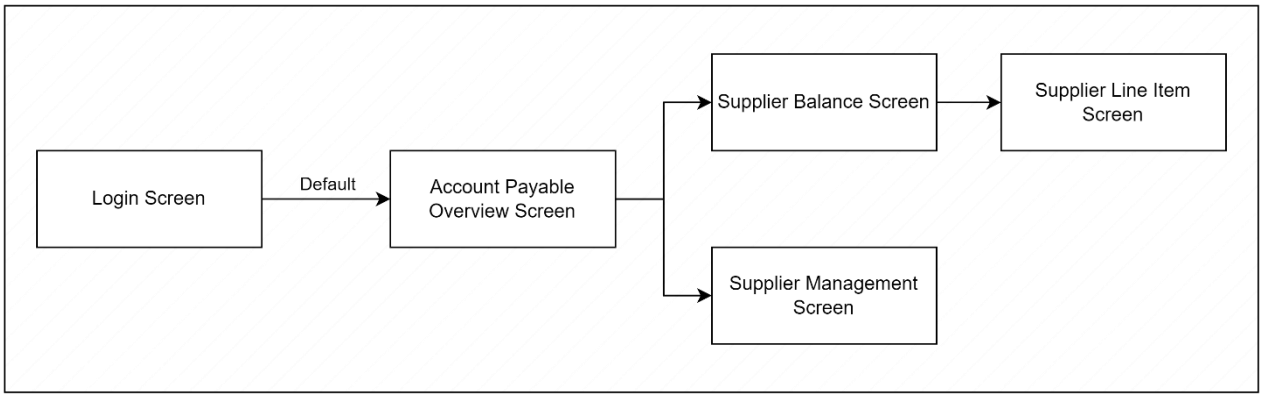


2.5.1.4. CF Statement Screen

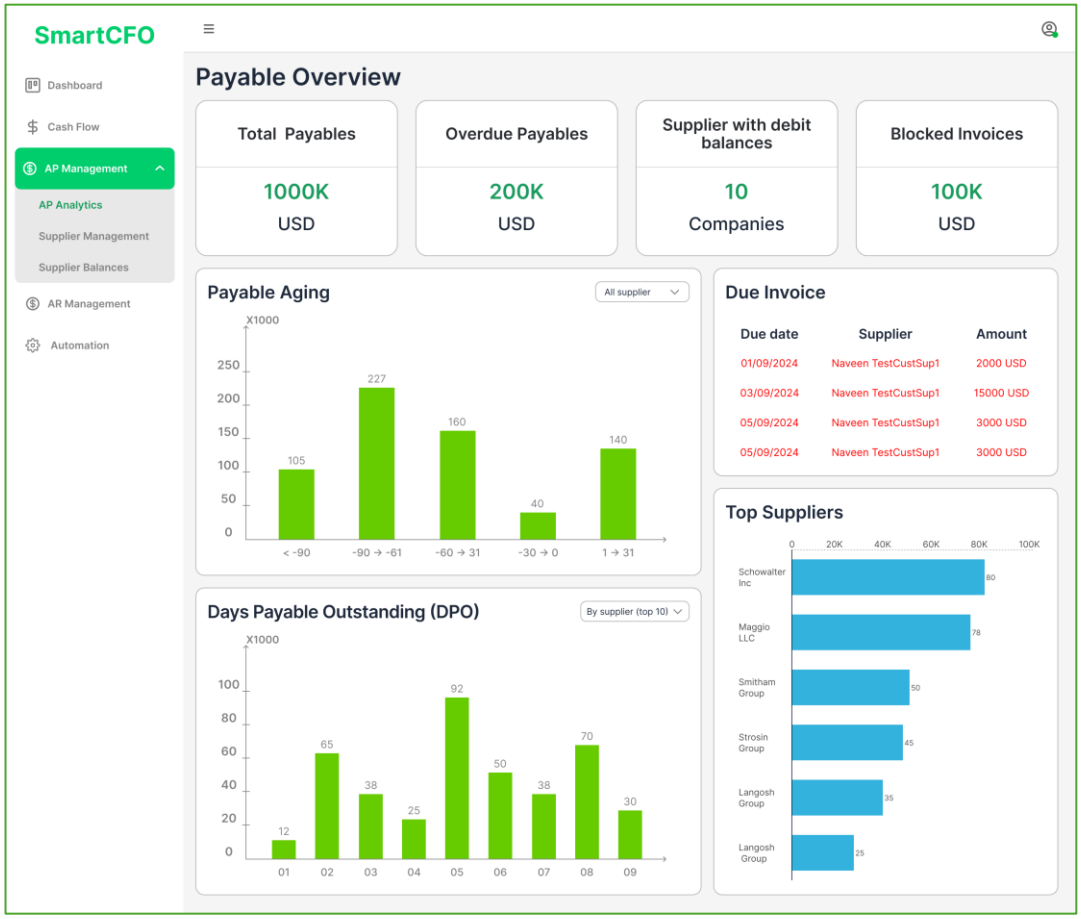


2.5.2. AP Management Features

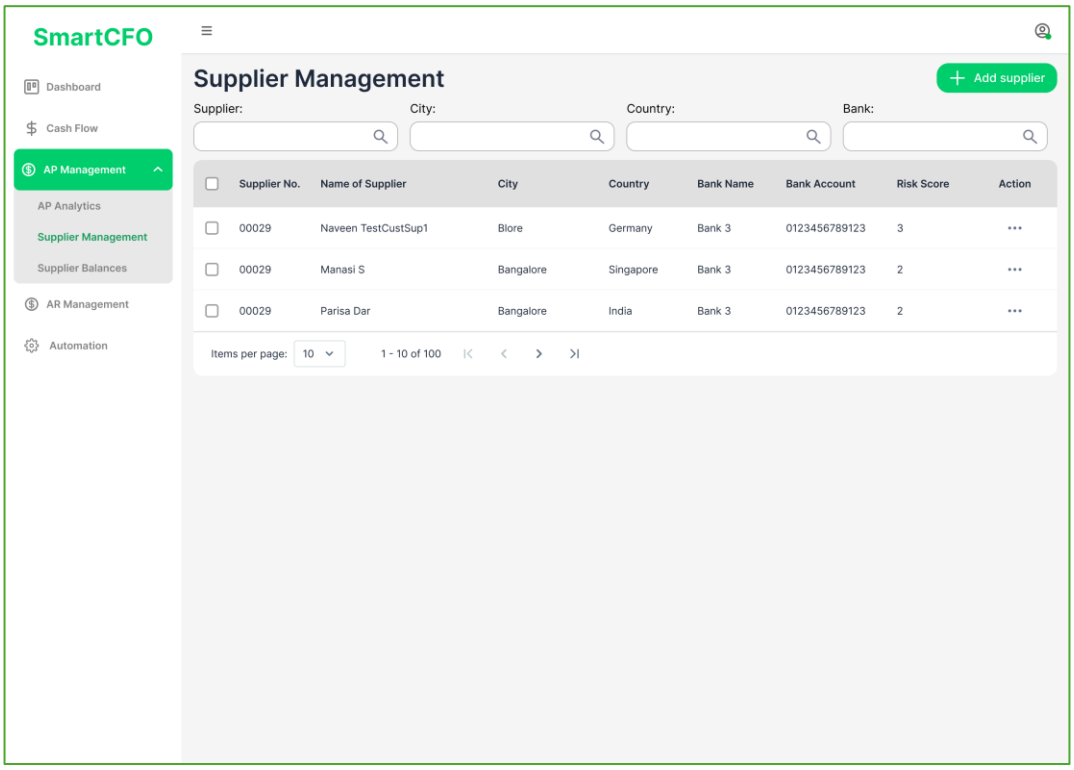
2.5.2.1. Screen Flow



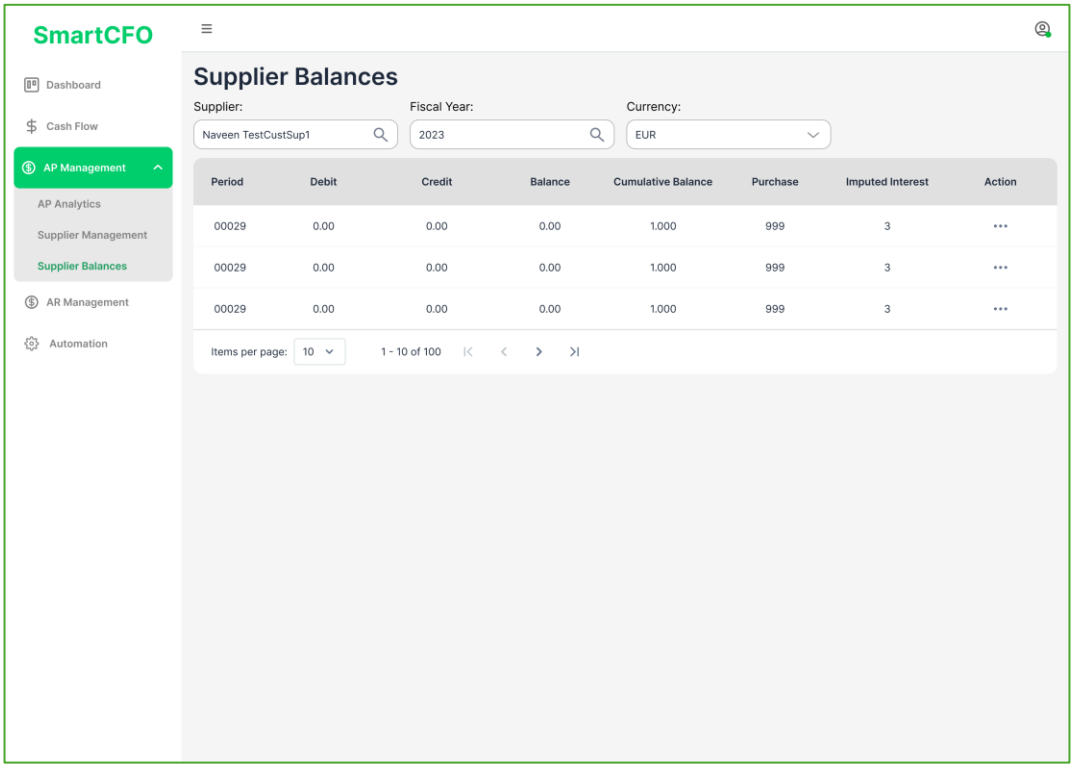
2.5.2.2. AP Analytics Screen



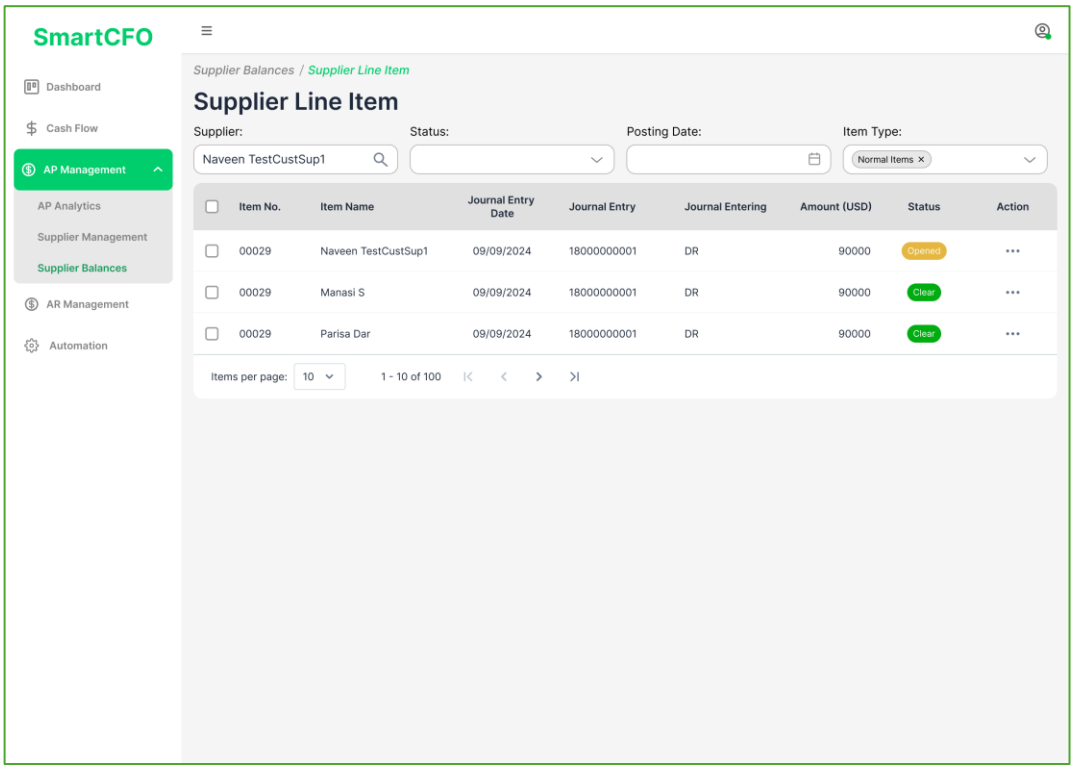
2.5.2.3. Supplier Management Screen



2.5.2.4. Supplier Balances Screen

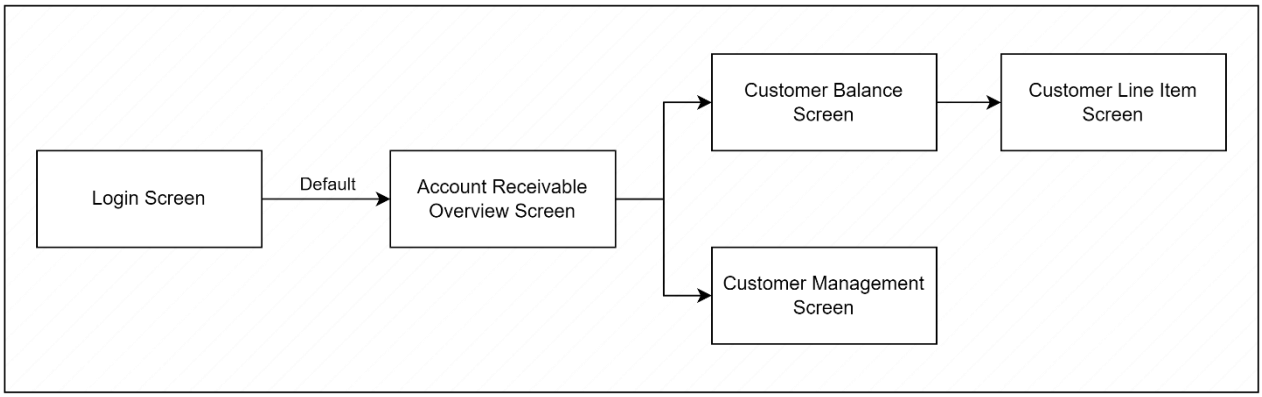


2.5.2.5. Supplier Line Item Screen

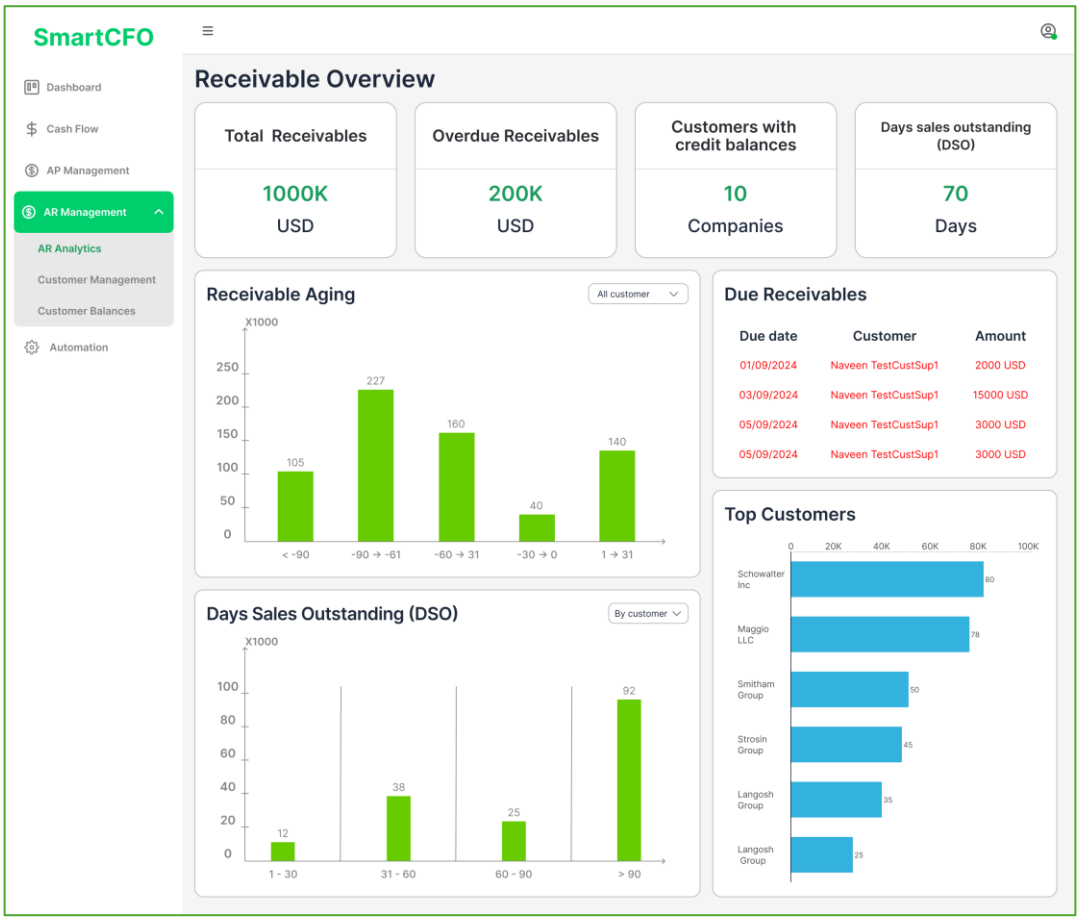


2.5.3. AR Management Features

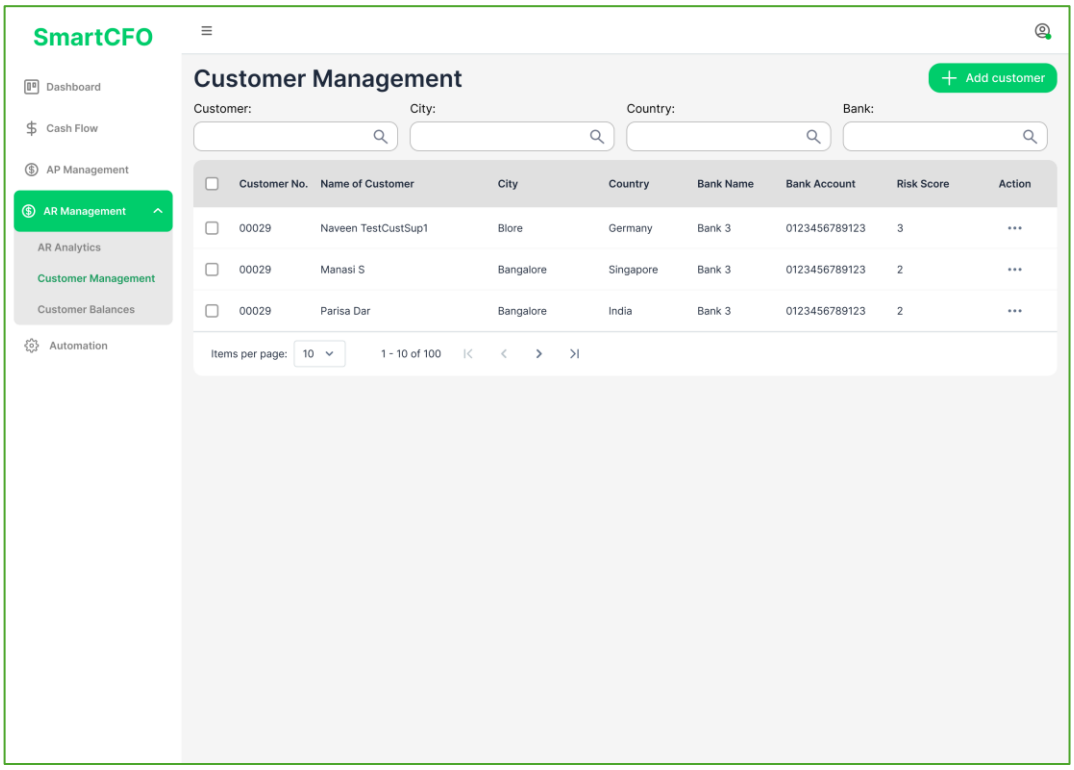
2.5.3.1. Screen Flow



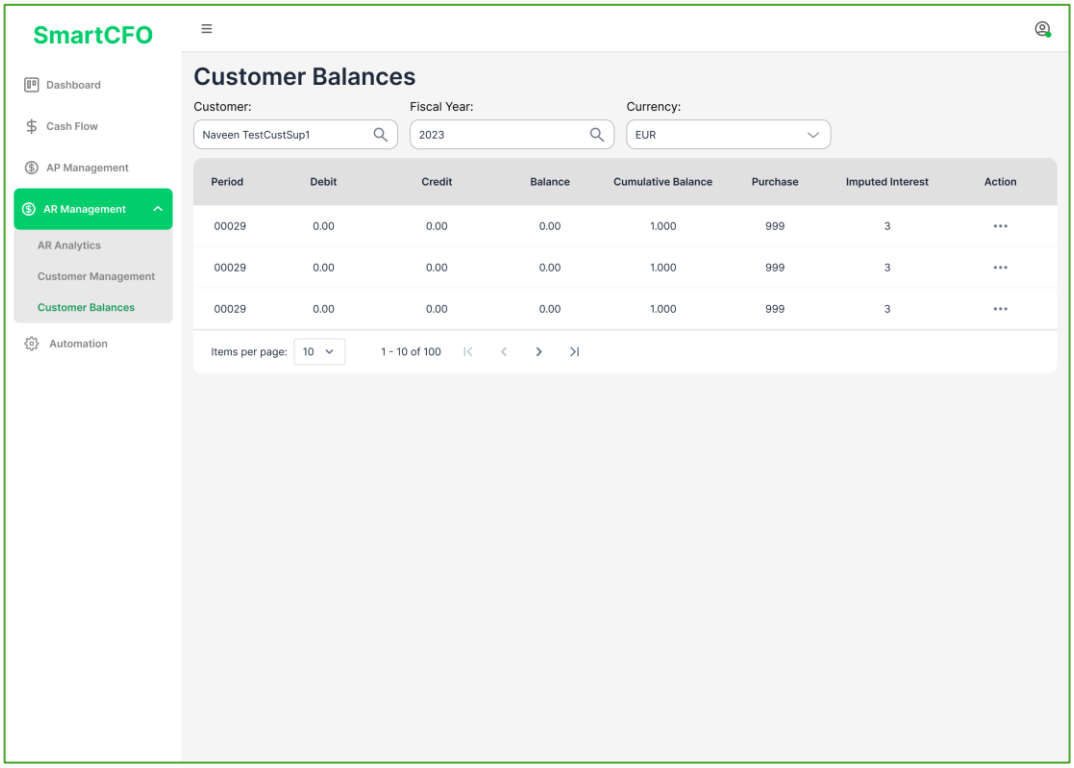
2.5.3.2. AR Analytics Screen



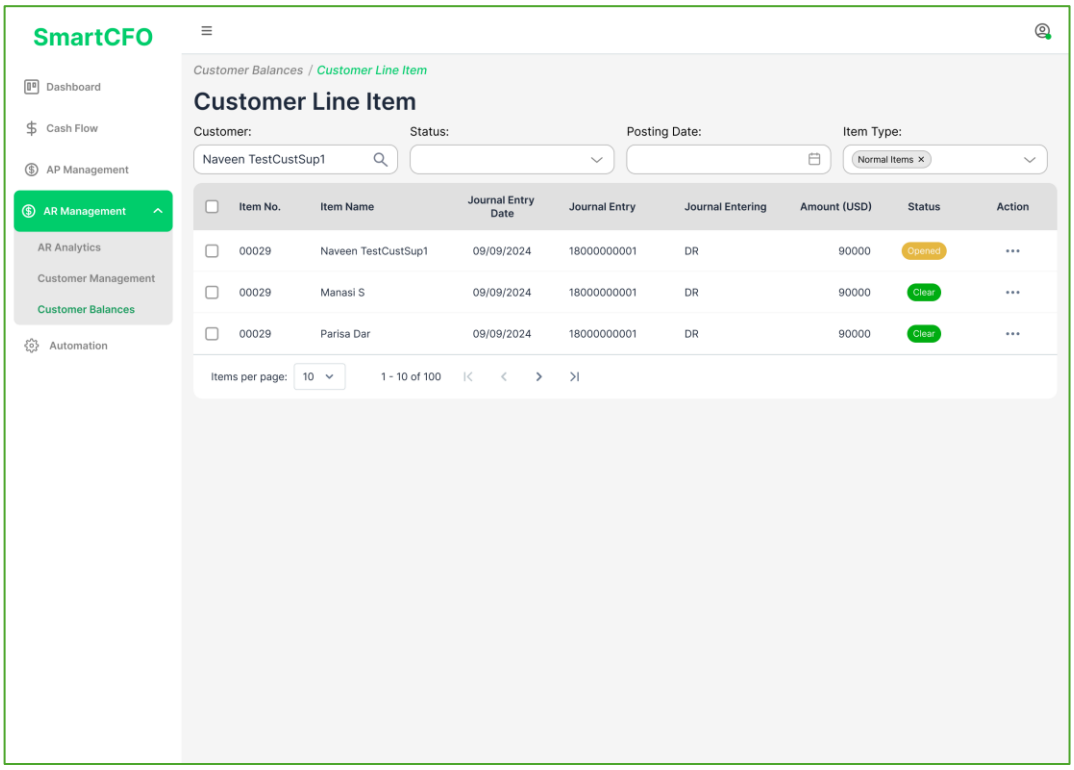
2.5.3.3. Customer Management Screen



2.5.3.4. Customer Balances Screen

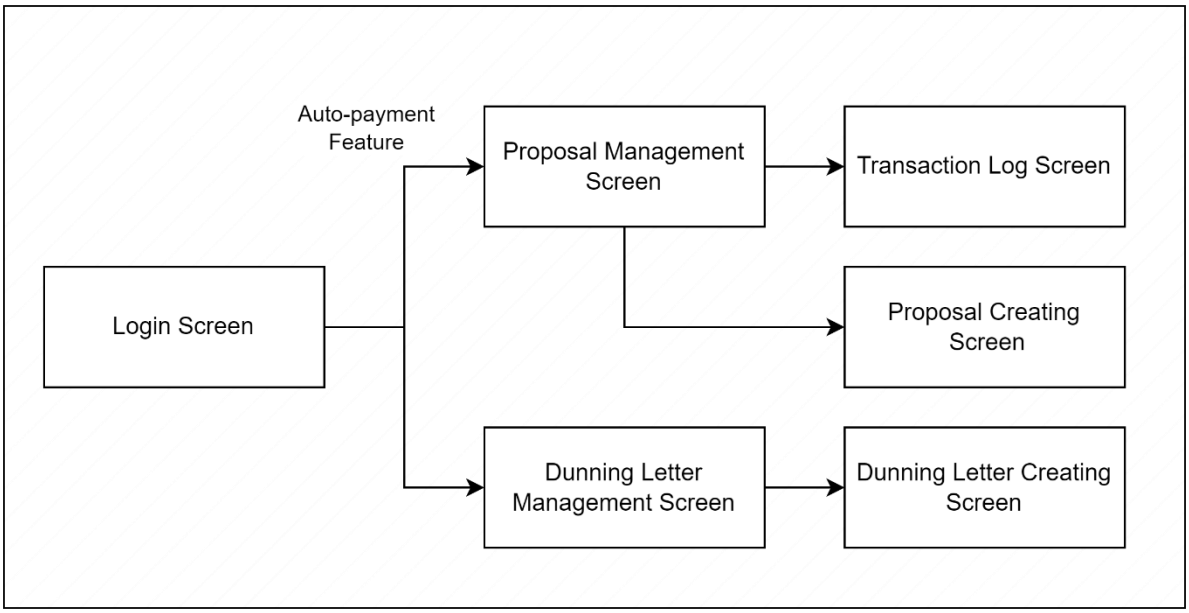


2.5.3.5. Customer Line Item Screen

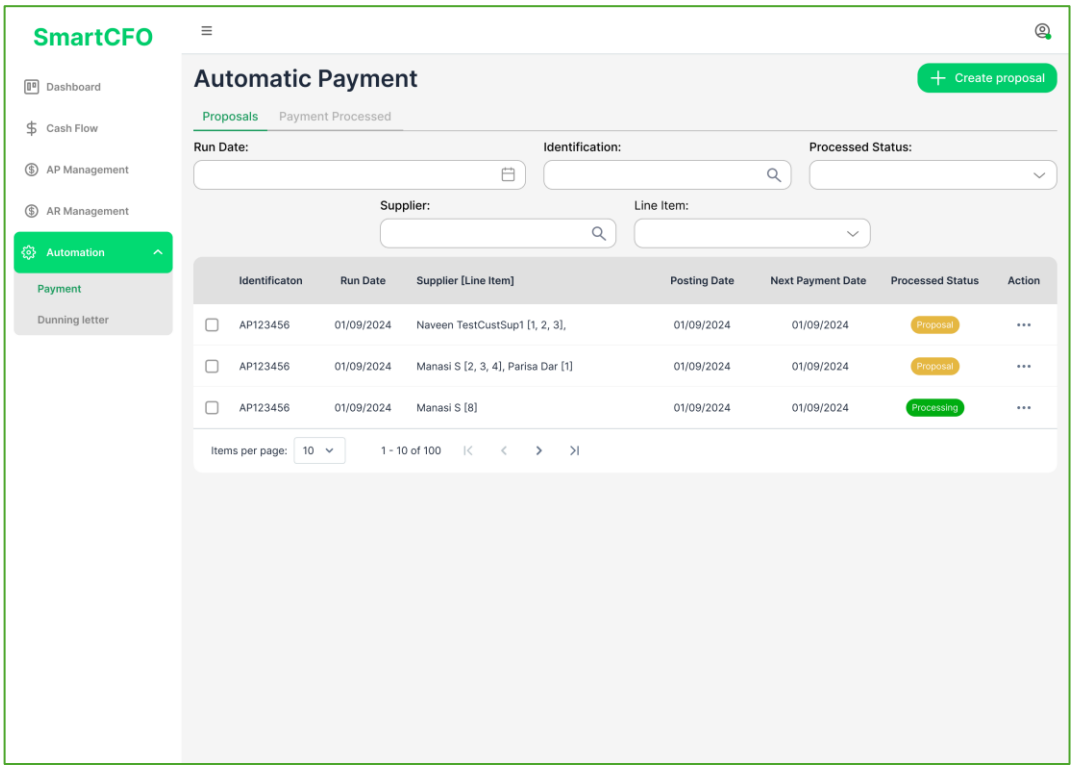


2.5.4. Automation features

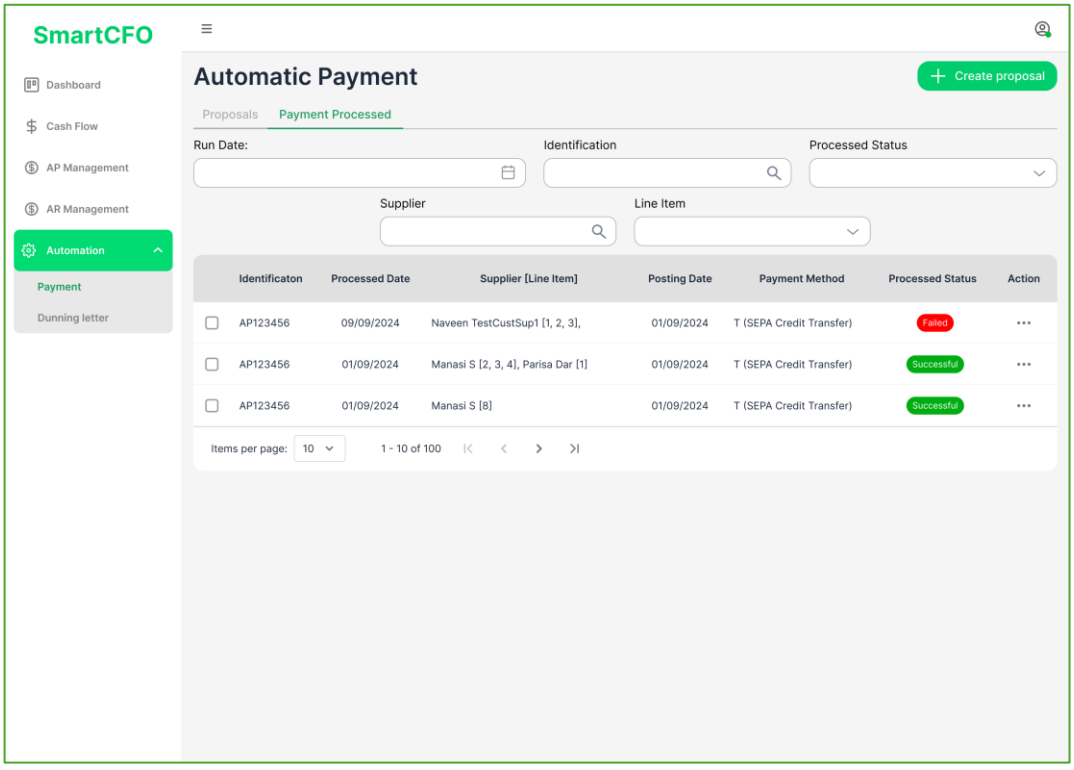
2.5.4.1. Screen Flow



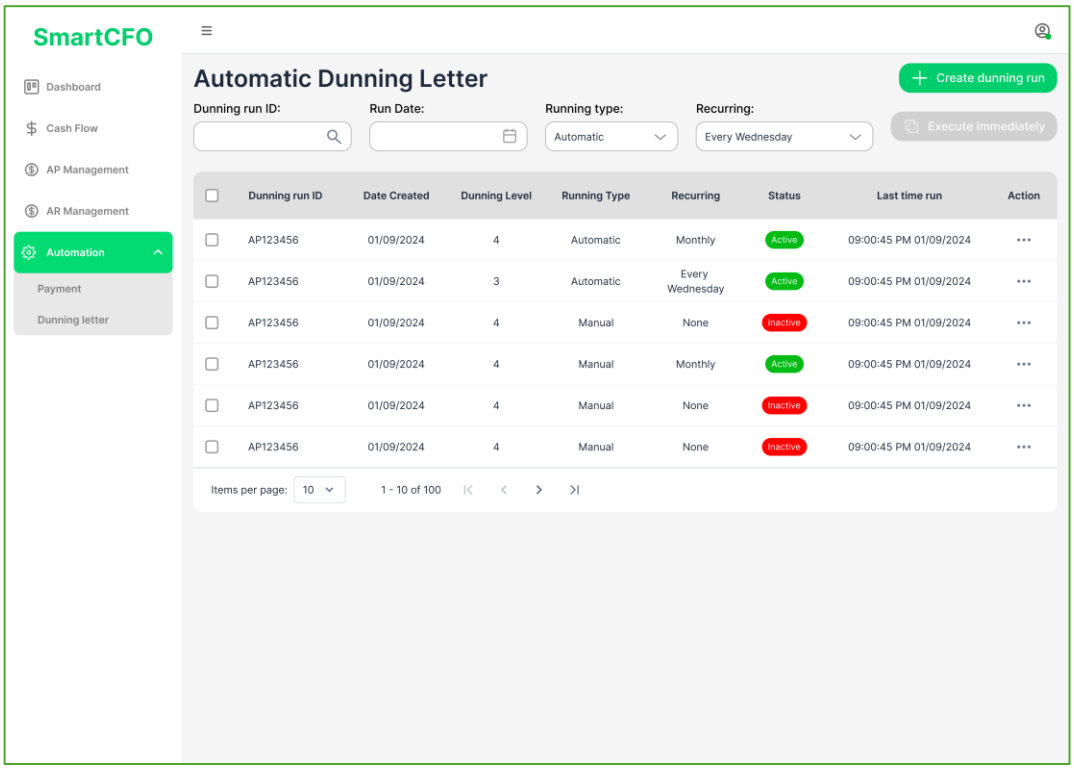
2.5.4.2. Automatic Payment Proposal Screen



2.5.4.3. Automatic Payment History Screen



2.5.4.4. Automatic Dunning Letter Screen



3. Technical Specification

3.1. Technology stack

In order to shorten the go-to-market time of the product, the introduced technology in the MVP is open to optimizing the development time and focus on the enrichment of key functionalities of the product.

3.1.1. Frontend technology – React.js

React.js (ReactJS), developed by Facebook, is an open-source JavaScript library that has become one of the most widely adopted tools for building dynamic and responsive user interfaces. It is a highly efficient and scalable solution for financial management projects, where the application often deals with large volumes of data. Here are some advantages making ReactJS outstanding in constructing these projects:

- Component-Based Architecture: ReactJS follows component-based architecture, allowing developers to divide the user interface into isolated, self-contained building blocks. Each component is responsible for rendering a specific part of the UI, such as tables, charts, or input forms, which are

common in financial applications. This modular approach not only enhances reusability but also simplifies testing, debugging, and future modifications.

- Virtual DOM for Efficient Rendering: Instead of directly interacting with the browser's DOM, which can be slow and inefficient for frequent updates, ReactJS maintains a lightweight copy of the DOM in memory. When data changes, the Virtual DOM compares the updates and only modifies the affected elements in the actual DOM, significantly improving performance. This is particularly beneficial for financial applications that handle large datasets and require efficient UI rendering without refreshing the entire page.

- Declarative UI: For financial management applications, this can simplify the handling of complex state changes, such as switching between different account views, toggling between historical data sets, or filtering transactions based on specific criteria. With ReactJS, the UI automatically updates as the underlying data changes, reducing the risk of errors and inconsistencies.

- **Integration with Backend Services:** ReactJS seamlessly integrates with backend services through APIs, including REST and GraphQL, making it ideal for financial applications that rely on external data sources. React's ability to handle asynchronous data fetching, combined with its efficient state management using tools like Redux, ensures smooth data flows, even in applications dealing with complex financial datasets.

- Scalability and Maintainability: As financial management projects grow in scope, scalability and maintainability become crucial. ReactJS's architecture supports the gradual expansion of the application by adding new features without affecting existing functionality. With its component-based structure, teams can work on different parts of the application simultaneously, which accelerates development and ensures a clean, organized codebase.

3.1.2. Backend technology – Node.js

Node.js is a highly efficient and scalable open-source runtime environment built on Chrome's V8 JavaScript engine. It enables the use of JavaScript for server-side development, allowing the creation of robust, high-performance network applications. In the context of financial management projects, which frequently involve processing substantial volumes of data and managing numerous client requests, Node.js proves to be a particularly suitable technology:

- **Non-blocking, Asynchronous Architecture:** Node.js operates on a non-blocking, event-driven architecture, which allows it to handle multiple requests at the same time without creating delays or performance bottlenecks.

- **Scalability and Efficiency:** One of Node.js's greatest strengths are its ability to scale horizontally across distributed systems. This is crucial for financial management platforms, which often need to handle increasing workloads as the number of users or transactions grows. Node.js's lightweight nature and event-loop model allow it to manage a large volume of requests without consuming excessive server resources.

- **Robust Support for REST APIs**: Node.js excels at building APIs (Application Programming Interfaces), making it an excellent choice for financial management systems that need to communicate with external services such as banking APIs, payment gateways, or data providers. Node.js provides robust support for building RESTful APIs, allowing seamless integration with these external systems. This enables financial management applications to retrieve and process data from multiple sources.

- **High-Performance Data Handling**: Financial management applications often require extensive data processing, such as performing calculations or handling large datasets. Node.js's asynchronous, event-driven nature allows for efficient data processing without blocking server resources. Additionally, Node.js can easily integrate with databases like MongoDB, MySQL, or PostgreSQL, making it well-suited for managing structured and unstructured financial data, such as transaction logs or financial statements.

- **Maintainability and Scalability**: Node.js's modular architecture ensures that codebases remain organized and maintainable as projects grow. This is particularly important for financial management systems, where new features - such as reporting tools, financial dashboards, or enhanced security protocols - may need to be added over time. With Node.js, teams can easily scale applications both vertically (by adding more powerful resources) and horizontally (by adding more nodes to the server cluster).

3.1.3. Middleware technology – Koa.js

Koa.js is a lightweight, modular, and modern web framework designed to facilitate the development of web applications and APIs by utilizing a more refined middleware system. Koa.js stands out as an ideal framework due to its flexibility and modularity, which make it suitable for a

project with enormous data size and precise transaction information. Here are some detailed specifications about Koa.js:

- Middleware Architecture for Enhanced Control: Koa.js is built on a middleware system that is significantly more expressive and granular than its predecessors. It follows a stack-like pattern where each middleware function has control over both the request and response cycles. For instance, specific middleware can be dedicated to validation, authentication, and data processing, ensuring that each layer of the application operates independently while maintaining a high level of security and control.

- Security and Compliance: Security is a key concern in any financial management system, and Koa.js offers the flexibility to implement robust security measures. By providing fine-grained control over the middleware stack, developers can enforce strict security protocols, such as authentication, data validation, and encryption, at various stages of the request lifecycle.

- Lightweight and Flexible Framework: Koa.js is intentionally designed to be unopinionated and minimalistic, allowing developers to build exactly the functionality they need without the overhead of pre-built components or unnecessary features. In financial management projects, this provides the flexibility to tailor the system according to specific business requirements, whether for generating financial reports, managing transactions, or integrating third-party financial services. The lightweight nature of Koa.js also ensures that the application remains performant, even as the complexity of the financial system grows.

3.2. Data management

3.2.1. Database technology

MySQL is an open-source relational database management system (RDBMS) that employs Structured Query Language (SQL) for comprehensive database management. Originally developed in the mid-1990s by a Swedish company named MySQL AB, it has since emerged as one of the most widely used databases globally, particularly in financial applications. MySQL is particularly well-suited for financial management due to the following characteristics:

- Efficient Query Processing: MySQL is optimized for read-heavy operations, which is crucial in financial management systems where quick retrieval of account balances, transaction histories, and financial reports is essential.

- **Proven Track Record:** MySQL has been utilized in numerous mission-critical applications, demonstrating its reliability in handling large-scale, high-demand environments commonly found in the financial sector.

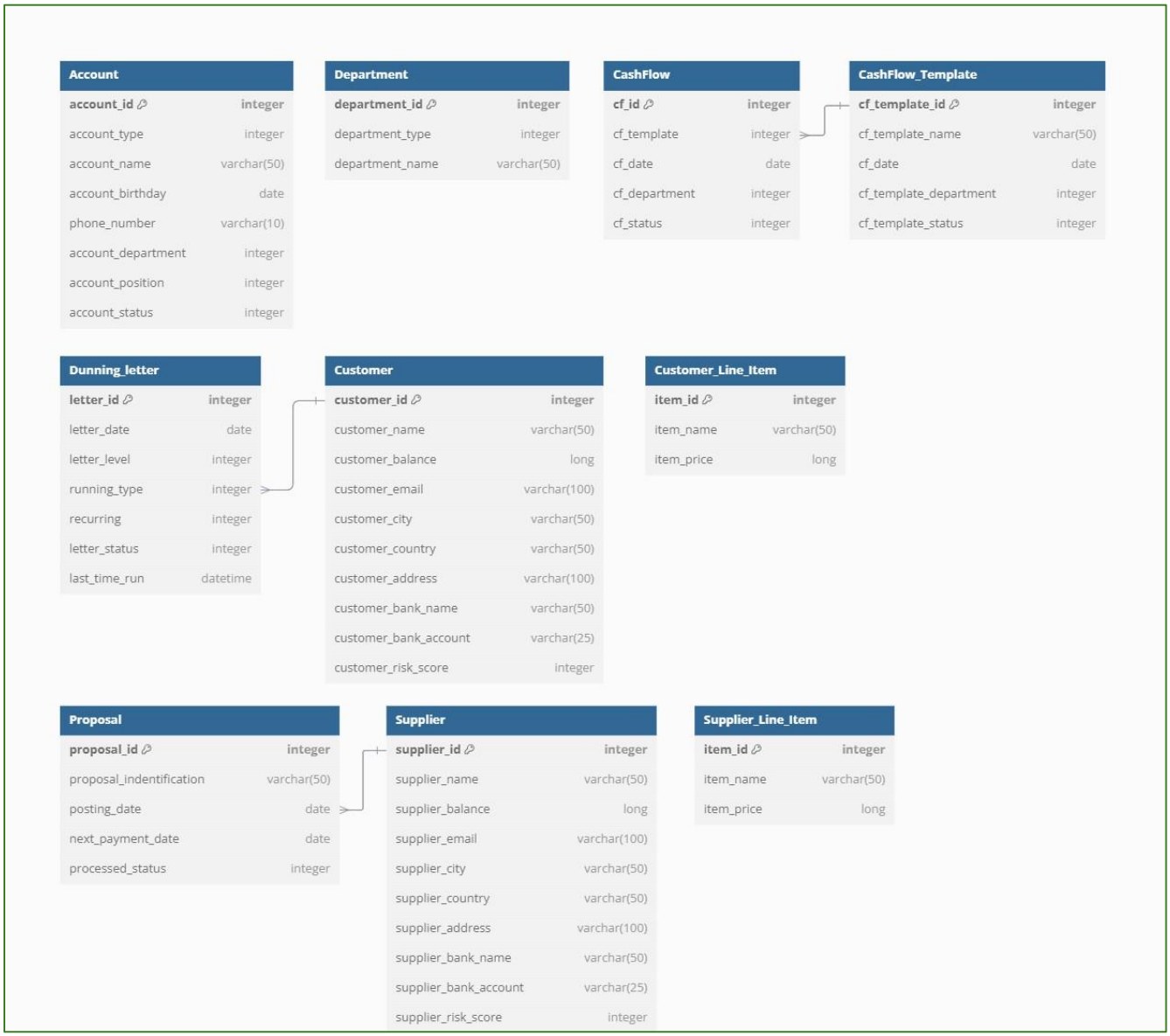
- **Data Integrity:** With features such as ACID compliance, MySQL ensures that transactions are processed reliably and that financial data remains consistent, even in the event of system failures, thus safeguarding against data loss or corruption.

- **Fast Data Retrieval:** MySQL's indexing capabilities and optimized query engine facilitate rapid data retrieval, which is vital for efficient financial reporting and decision-making.

- **Support for Transactional and Analytical Queries:** MySQL efficiently handles both transactional data, such as account updates, and analytical queries, such as generating performance reports, which are essential for evaluating financial health.

- **Support for Geospatial Data Types:** While primarily a feature for applications needing location data, MySQL's support for geospatial data types can also be adapted in financial contexts, such as analysing the geographic distribution of financial transactions, enhancing insights into market behaviour and regional performance.

3.2.2. Entity relationship diagram – ERD



4. System Development

4.1. Developing team

Role	Additional information

Project Sponsor	25+ experience in Business and Leadership Management in No 1 MNC Giant Tech Vendor
Project Manager	10+ experience in Project Management
Business Analyst	Bachelor's in finance and accounting, 15+ experience in deploying ERP and Finance System for conglomerates across industries. Bachelor's in engineering and business with BA experience
Senior Business Advisor	Business Industry Experts with 20+ experience in IT and Business Management, Banking and Finance Background
Front-end Engineer	Bachelor's in engineering
	Bachelor's in engineering
	Bachelor's in engineering
	Bachelor's in engineering
Back-end Engineer	Bachelor's in engineering
	Bachelor's in engineering
AI Expert	Ph.D. AI Specialist

4.2. Development timeline

Description	Task	Duration (days)
Phase 1: Project definition and setup		
	Concept definition	2
	Budget Estimate	8
	Requirement analysis	8
	Risk identification	5
	Technology definition	2
	Architecture Design	5

Phase 2: Sprint 1 – Super Admin account creation & Cash Flow feature		
	Planning	1
	UI/UX Design	5
	Development	5
	Testing	2
	Deployment	1
Phase 3: Sprint 2 – Account Payable & Account Receivable		
	Planning	1
	UI/UX Design	5
	Development/Bug fixing	5
	Testing	2
	Deployment	1
Phase 4: Sprint 3 – Automation Feature		
	Planning	1
	UI/UX Design	5
	Development/Bug fixing	5
	Testing	2
	Deployment	1
Phase 5: Project finalization		
	Final testing	2
	Document delivery	1
	Product delivery	2
	Post-Implementation Review	2
	Budget comparison	3
	Summary reporting	2

5. Future Developments

5.1. Future functions

5.1.1. Embedded AI and OCR to extract data from hard documents:

The AI and OCR-based document processing function within this system allows users to upload scanned copy of hard documents in various formats, supporting both single and batch uploads. Using advanced OCR technology, the system scans and digitizes the text from the scanned docs such as, contracts, invoices, extracting key data fields such as contract value, payment terms, invoice number, date, vendor name, line items, amounts, and tax details…. AI algorithms then validate the extracted data by cross-referencing it with predefined templates and historical data, identifying and flagging potential errors for manual review. The system continuously improves accuracy through machine learning. Seamlessly integrating with existing accounting systems via APIs, the system maps the extracted data to the corresponding fields in the accounting software and automatically populates the validated invoice data, reducing manual data entry

5.1.2. Smart virtual assistant

The future functions include using AI to empower a virtual assistant. Users can submit requests via a chat box and swiftly access necessary data without going through multiple application windows, which can be time-consuming. For instance, users can quickly call up data by typing in the chat box as follows: “Retrieve the accounts payable balances of vendor ABC”… or make a quick analysis of financial data by asking the embedded assistant to provide the analysis report of some financial indicators like DSO, DPO, ROE and Break event point…..

5.1.3. In-depth Analysis Reports:

More analysis reports will be developed along with future development providing more comprehensive and in-depth view of the company’s financial standing. These forthcoming features include supplier and customer analysis reports, functions for profit and loss analysis, as well as capabilities for analyzing sales data. By harnessing historical data and leveraging artificial intelligence, the system aims to generate even more precise and insightful analysis reports to support financial decision making process.