CONTRACT TO PURCHASE ORDER B2B MANAGEMENT SYSTEM

THESIS REPORT

SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS
FOR THE AWARD OF THE DEGREE
OF
MASTER OF DESIGN
IN
VISUAL COMMUNICATION

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DECLARATION

I, Shruti Yadav (2K21/MDVC/12) do hereby declare that the project report submitted to the Delhi Technological University (Formerly Delhi College of Engineering) in partial fulfilment for the award of degree in Master in Design entitled, **"Contract to Purchase Order B2B Management System"** is an original piece of research work carried out by myself under the guidance and supervision of Mr. Neeraj Rathee.

I have duly acknowledged all the sources and references used by me in the preparation of this thesis.

I further declare that the information has been collected from genuine & authentic sources

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CERTIFICATE

This is to certify that this dissertation entitled **"Contract to Purchase Order B2b Management System"** submitted in partial fulfilment, for the award of degree in Master of Design of the Delhi Technological University (formerly Delhi College of Engineering) which is the result of the bona fide research work carried out by Shruti Yadav (2K21/MDVC/12). I find the work complete, comprehensive, and of sufficiently high standard to warrant its presentation for the examination. I further certify that the work has been carried out under my guidance and has not been submitted earlier to any other university for the Degree or Diploma.

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ABSTRACT

Companies often struggle to maintain track of their contracts and purchase orders in today's fast-paced business world, which can result in missed deadlines, lost opportunities, and even legal difficulties. The **Contract to Purchase Order Management System** is a Management Tool that addresses these issues by improving the contract and purchase order management process.

This Management Tool assists businesses in organizing and storing all of their contracts in one place, allowing them to rapidly access and evaluate critical information such as contract terms, renewal dates, and price. Companies can also use this software to easily construct new contracts, raise Purchase Orders against contracts, track order progress, and receive real-time delivery status information.

This software streamlines the contract and purchase order process in addition to providing a number of other advantages to businesses, including as report generation, role-based access controls, encryption, and audit trails that provide a thorough record of all contract-related operations. The Contract to Purchase Order Management System is an effective solution that enables businesses to organize their processes, boost productivity, and lower risk so they can concentrate on their core company operations and spur growth.

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List of Abbreviations

IA	Information architecture (IA) focuses on organizing, structuring, and labelling content in an effective and sustainable way. The goal is to help users find information and complete tasks. To do this, you need to understand how the pieces fit together to create the larger picture, how items relate to each other within the system.
SOW	A Statement of Work, often known as an SOW, is a business agreement that outlines deliverables and project goals. It's created to keep everyone on the same page about deadlines, scope of work, and project expectations. Creating an SOW helps clients and vendors to stay aligned and reach their project goals together.
PO	A purchase order is a commercial document that is issued by a business' purchasing department when placing an order with its vendors or suppliers. The document indicates the details on the items that are to be purchased, such as the types of goods, quantity, and price. In simple terms, it is the contract drafted by the buyer when purchasing goods from the seller.
PR	A purchase requisition is a form filled out by an employee, requesting that the purchasing department obtain certain goods or services. The form includes information about the nature and amount of the items to be acquired, and when they are needed.
HSN	HSN stands for Harmonized System of Nomenclature and is used to classify goods in a systematic manner.
SAC	SAC stands for Servicing Accounting Code and is used to classify services instead of goods.
RFQ	Request for quote (RFQ) is a process wherein an enterprise asks a set of potential suppliers or service providers to submit their price quotations and stand a chance to supply or provide goods or services. Once the enterprise receives the price quotations, it can choose the vendor that best matches its criteria for the goods or services.

Chapter 1

INTRODUCTION

1.1 Genesis

For the commencement of my sponsored project during the 4th semester (final semester) of my Master of Design, I joined **Mynd Solutions Pvt Ltd** for the time period of 14 weeks, i.e. from 03 January, 2023 - 9 April, 2023.

During my academic journey, I have been fascinated by the creative aspects of designing and developing intuitive interfaces that enhance the user's experience. I was exposed to an extensive range of project phases over the duration of the internship, which challenged my ability to think creatively and push the limits of what was possible. The experience I gained during this internship has not only helped me to refine my skills as a designer but has also set me on the path towards a rewarding career in this field.

As a product design intern, I was tasked with working on a project that involved developing a **"Contract to Purchase Order Management System"**. To begin with, I spent time understanding existing similar systems and their features and functionalities, and then later worked on the ,defining the users, creating user flows, information architecture, wire framing and development of the User Interfaces for the tool. As I progressed with the project, I gained a deeper understanding of the technical aspects of the contract to purchase order management system, such as how it integrates with other systems and how it stores and retrieves data. Exposure to all the stages of product development acts like the first step of larger ladder of me as a designer to climb.

1.2 About the Organization

Figure 1: Logo Mynd Solutions Pvt Ltd

Mynd Integrated Solutions is a leading global service provider in business process and technology management, offering broad spectrum of services in Finance and Accounting (FAO), Human Resource Outsourcing (HRO), Information Technology (IT) and Consulting.

It's team of subject matter experts have the right blend of technology and effective business process experience to fully realize the benefits of process improvements. Mynd Integrated Solutions provides significant value beyond the technology. It understands that BPM lies at the intersection between technology and process, and requires deeper business knowledge beyond system integration to succeed. It offers platform as SaaS (Software as a Service) which complements the services delivered, to suit customers' need across the globe.

Figure 2: Milestone achieved by Mynd Solutions Pvt Ltd

Mynd Integrated has a worldwide presence through offshore offices and global partners across continents.

Committed to fulfilling outsourcing demands of the international market through its bespoke services, Mynd has incorporated "Mynd Integrated Solutions Asia Pte.Ltd".

Mynd’s sister concern is based in Singapore to manage international business endeavours and to provide robust solutions to international clients under a single umbrella.

Chapter 2

PROJECT OVERVIEW

2.1 Introduction

In today's fast-paced business world, companies often struggle to keep track of their contracts with vendors and purchase orders. This can result in missed deadlines, lost opportunities, and even legal complications.

Contract to Purchase Order Management System is a tool which addresses these challenges, and allows us to maintain a record of existing contracts, even create new contracts and raise Purchase orders against them. It streamlines the process of managing contracts and purchase orders. This software helps companies to organize and store all their contracts in a centralized location, allowing them to quickly access and review important information such as contract terms, renewal dates, and pricing. Companies may easily generate new contracts with the help of this software. The intuitive interface makes it simple to input any required information and create a contract that is customized according to specific needs of the business.

Raising Purchase Orders (POs) against contracts is one of this software's primary functionalities. Companies are able to generate a PO for a specific contract and have it immediately sent to the appropriate stakeholders for approval. This streamlined procedure lowers the possibility of mistakes and delays while ensuring that all purchases are done in compliance with the contract's requirements.

Once a PO has been approved, the software allows companies to track the progress of the order and receive real-time updates on delivery status.By managing their resources and inventory more effectively and making sure they are fulfilling their contractual duties, businesses can benefit from this degree of visibility.

This software serves companies in a variety of additional ways in addition to expediting the contract and purchase order processes. For instance, it helps businesses to easily produce reports that offer insights into indicators for acceptance, vendor efficiency, and performance of contracts. Companies can use this data to find opportunities for development and make data-driven decisions that promote business growth. This software also includes basic features like contract modification, their extension foreclosure and purchase order generation, partial short closing, etc.

The security features of this application are yet another significant benefit. To safeguard sensitive information including contract terms, prices, and vendor information, it offers numerous layers of security. This incorporates encryption, audit trails, and role-based access controls that offer a thorough record of all contract-related activity.

In conclusion, the Contract to Purchase Order Management System is an effective tool that supports companies in streamlining their processes, increasing productivity, and lowering risk. This software enables companies to concentrate on their main company operations and spur growth by centralising contract management and offering a variety of user-friendly features.

2.2 Understanding the Documents Involved

Contract

A contract is an agreement between a company and vendor that establishes what terms and conditions will govern all current and future activities and responsibilities. The contract will generally include a statement of work (SOW) that outlines the specific tasks or projects that the vendor will be responsible for completing, along with any relevant timelines and budget information. They serve as a framework for future SOW between the parties.

Once a contract is signed, both parties are legally bound to abide by its terms and conditions. Failure to do so may result in legal action, including damages or termination of the agreement.

Purchase Order

A company uses a purchase order (PO) to communicate to a vendor the specifics of its requirements. It is essentially a formal request made to the vendor outlining the details of the transaction, including the quantity, price, and other terms and conditions.

POs are an important tool for companies to manage their purchases effectively. They provide a clear and transparent way to communicate requirements with vendors and ensure that both parties have a shared understanding of the transaction. POs also help to prevent errors and misunderstandings by documenting all of the relevant details of the transaction in writing.

A purchase order (PO) may be issued in response to a statement of work (SOW) or a purchase request (PR) that has been approved by the management of a company. In this scenario, the vendor is expected to provide the items or services listed in the PO, which is based on a pre agreed-upon scope of work or pre-approved purchase request.

POs can be raised against vendors directly in addition to being raised against SOWs and PRs. This happens when a company already has a working relationship with a vendor and wishes to purchase items or provide services that aren't covered by a SOW or PR. In this scenario, a company will produce a PO that has all of the particulars of the transaction, including quantity, pricing, and delivery.

Purchase Request

A purchase requisition (PR) is a formal request made by an employee of a company to the purchasing department to procure certain goods or services. The purpose of a PR is to initiate the procurement process and ensure that the requested items or services are acquired in a timely and efficient manner.

The PR typically includes information about the nature and amount of the items or services to be acquired, as well as when they are needed. It may also include information about the vendor, the budget, and any other relevant details that will help the purchasing department to process the request.

Once the PR is submitted, the purchasing department will review it and assess whether the requested items or services are necessary, feasible, and within budget. If the request is approved, the purchasing department will then initiate the purchasing process, which may involve issuing a request for proposal (RFP) to vendors, obtaining quotes or bids, negotiating contracts, and so on.

In conclusion, a purchase requisition is a form filled out by an employee requesting that the purchasing department obtain certain goods or services. The form typically includes information about the nature and amount of the items or services to be acquired, as well as when they are needed. PRs are an important tool for initiating the procurement process and ensuring that the requested items or services are acquired in a timely and efficient manner.

Statement of Work (SOW)

SOW refers to a document that outlines the work that is to be performed by a vendor or contractor for a client company. An SOW typically includes a detailed description of the work to be performed, as well as any deliverables, timelines, and milestones associated with the project.

The SOW serves as a guide for both the client company and the vendor/contractor, and helps to establish a clear understanding of the project scope, expectations, and responsibilities. It also helps to ensure that both parties are aligned on the objectives and outcomes of the project.

Within the SOW, there may be line items that outline specific deliverables or milestones, and may include defined rates or amounts associated with each item. This information can be used to generate a Purchase Order (PO) for the vendor or contractor to proceed with the work. The PO can then reference the specific line items and rates defined in the SOW, helping to ensure that both parties are clear on the expectations and financial terms of the project.

In summary, an SOW is a document that outlines the work to be performed by a vendor or contractor for a client company. It includes a detailed description of the work, as well as any deliverables, timelines, and milestones associated with the project. Line items and rates defined within the SOW can be used to generate a Purchase Order for the vendor or contractor to proceed with the work.

2.3 Existing System

The process of fulfilling a new requirement for a product or service in a company involves several stages. Initially, an employee informs the higher authority about the requirement, and the authority checks whether the product or service is available in the company's inventory. If the product or service is not available, a Purchase Requisition (PR) is raised, and it undergoes a PR approval workflow.

Once the PR is approved, it goes to the procurement department, which is responsible for releasing a Request for Quotation (RFQ) and sending it to various vendors. The vendors, in turn, send back procurement quotations, which the procurement department compares and analyses. After considering all the factors, the procurement department finalizes a vendor and raises a Purchase Order (PO) against them.

The Purchase Order then undergoes its approval workflow, and after receiving the necessary approvals, it reaches the selected vendor. The vendor then delivers the products or services to the company.

However, the process of generating RFQ, waiting for quotations, selecting the most suitable vendor, and then generating a PO against them can be time-consuming. Therefore, it is essential to have an efficient and streamlined process to ensure timely fulfilment of requirements while minimizing delays and errors.

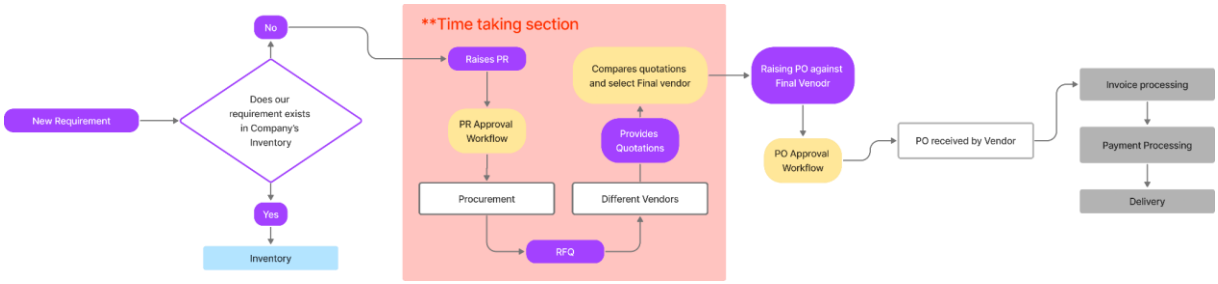


Figure 3: Existing Workflow of generating the Purchase Order

2.4 How does Contract to PO Management System improves existing system

When a company has a certain level of certainty that they will require specific products and services over an extended period, it is beneficial to establish contracts with vendors. By having a contract in place, the procurement process can be streamlined, reducing the need for lengthy processes such as Request for Quotation (RFQ) and vendor selection.

The contract contains a Statement of Work (SOW) that outlines the specific line items required, along with their corresponding rates, grouping, HSN/SAC code numbers, and the validity of the contract. Contracts are finalized after a set of negotiations with the vendor, ensuring that both parties are aligned on the scope of work, expectations, and financial terms.

When a requirement arises, the procurement department can bypass the RFQ floating process, waiting for vendor quotations, and then selecting the vendor. Instead, they can directly refer to the contract that includes the same line items as the Purchase Requisition (PR) and raise a Purchase Order (PO) against it.

This approach saves time and effort by eliminating the need for the entire vendor selection process, which involves waiting for vendor quotations, analysing them, and comparing rates. With contracts in place, the procurement department can swiftly raise POs against the selected vendor, ensuring timely fulfilment of requirements without compromising on quality or price.

Moreover, having contracts in place also helps in building strong and long-term relationships with vendors, as it provides a sense of security and stability to both parties. By knowing that they have a steady flow of work from the company, vendors can plan their resources and investments more efficiently, leading to better service delivery and cost savings.

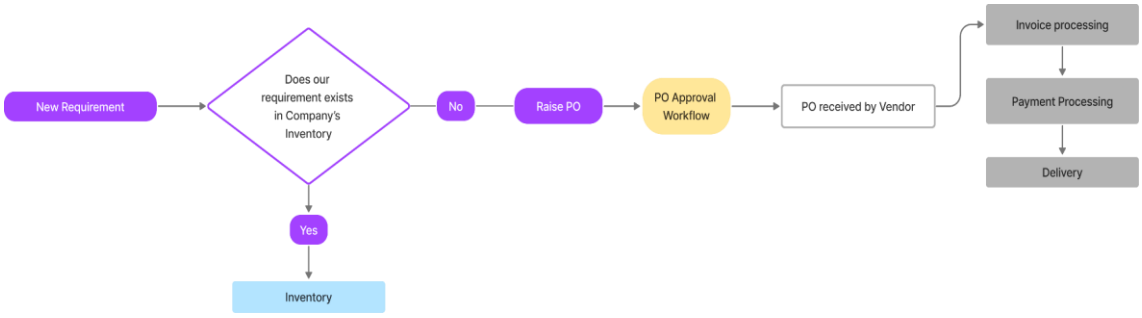


Figure 4: Workflow of generating PO with Contract to PO Management System

The management of contracts with different vendors is a crucial aspect of procurement in any organization. However, managing these contracts can be a challenging task, as they often exist as physical documents with no specific format. It can be difficult to keep track of when contracts are expiring, which line items belong to which contract, and the remaining value of each contract. Furthermore, modifications, extensions, or foreclosure of these contracts can be a massive undertaking.

To address these challenges, a Contract to Purchase Order (PO) Management system can be implemented. This tool allows for the consolidation of all contract details into one centralized location, streamlining the organization and management of contract data. By converting contract data into a uniform format, the system ensures that no data field is missed. The system's uniform format was finalized after researching different types of contracts.

The system also allows users to create new contracts with vendors. The tool works in conjunction with various SAP software to manage inventories.

By listing all contracts under one software, raising a purchase order becomes a straightforward task. Users can easily search for contracts, Statements of Work (SOW), and vendors and directly find them in the database. Once found, users can enter quantities against the line items, and the rates are already defined during the creation of the contracts and SOW.

The Contract to PO Management system also facilitates the approval process of contracts and POs. It allows for chat communication between relevant stakeholders during the approval process, eliminating the need for conversation over the phone or email. For instance, if the approver has any doubts regarding the PO creation, they can converse with the PO creator on the software.

The Contract to PO Management system is a crucial tool for organizations seeking to streamline their procurement processes. It offers a solution for the challenges posed by managing contracts and ensures that contracts are managed efficiently, effectively, and in a timely manner. By implementing this tool, organizations can reduce the time spent managing contracts, increase productivity, and improve overall procurement performance.

Chapter 3
USERS

3.1 Defining Users

In order to ensure the effective operation of the Contract to PO Management System, it is necessary to categorize the user base into five distinct groups. These groups include:

1 Contract Creator

2 Contract approver

3 Purchase Order Creator

4 Purchase Order Approver

5 Vendor

6 Admin

CONTRACT CREATOR

The person responsible for creating any contract. He will be allowed to modify contracts, add and modify new Statement of works for existing contracts, extend and short close Contracts and Statement of works.

CONTRACT APPROVER

Whenever contract creator creates, modifies extends or shortcloses a contract or SOW the system doesn't reflect that immediately, the changes undergo an approval cycle, that can be different for different departments, which is defined by the Admin. Contract Approvers will be giving **"Approvals"** for Contract and SOW related. The Contract Approvers also have an option to **"Reject"** the Contract/SOW at all if they don't find it relevant or they can **"Reconsider"** if they find some sort of small glitches which have to be corrected by the Contract Creator.

PURCHASE ORDER CREATOR

This user group will be raising Purchase Orders against contract, SOW or directly against vendors. They will be inputting quantities against the line items declared in SOW and Contracts, if they are raising this PO against Contract/SOW. In other cases they will be declaring the line items with their quantities, rate, HSN/SAC code, group etc. They will also be responsible for modifying and short closing the Purchase Orders. The Purchase Orders can be short closed in Bulk, can be individually short closed, or it can be short closed partially too, depending upon its requirement.

PURCHASE ORDER APPROVER

Whenever Purchase Order creator creates, modifies or shortcloses a PO the system doesn't reflect that immediately, the changes undergo an approval cycle, that can be different for different departments, which is defined by the Admin. Purchase Order Approvers will be giving **"approvals"** for Purchase Order related iterations and creation. The PO approvers also have an option to **"Reject"** the PO at all if they don't find it relevant or they can **"Reconsider"** if they find some sort of small glitches which have to be corrected by the Purchase Order Creator.

VENDOR

These user groups are the businesses with whom the company is having contracts and against which the PO are generated. Whenever PO is generated and it completes its approval cycle, it is then sent to the vendor, who sees the products and services that have to be delivered on a specific date or during a service period. If it is doable for him he **"Accepts"** the purchase order and it he has some sort of issues with the completion of the Purchase Order he **"Raises a Dispute"** against it with a message stating his issue, which then goes to the PO Creator where they do the necessary changes and then the PO undergoes the approval cycle again.

ADMIN

Admin is responsible for the role allocations in the entire systems, he decides the level of authority. He decides how many approvers does each department require and who all are approvers for specific departments. It also declares which all scenarios require approval from the finance or legal departments.

User Groups	**Functions**
Contract Creator	Can create, modify, extend and short close SOW and Contracts
Contract Approver	Contract Approver: will be providing approval to any action done by the contract creator.
PO Creator	PO Creator: will be creating PO against existing contracts/SOW, modifying and short closing them
PO Approver	PO Approver: will be providing approval to any action done by the PO creator.
Admin	Manage the configurations and masters
Vendor	Vendor: Will be accepting or raising a dispute against the PO, and then delivering the order.

Table 1: User groups division and their functions

3.2 User Flows

The following are the user flows for different set of actions performed by different set of user groups

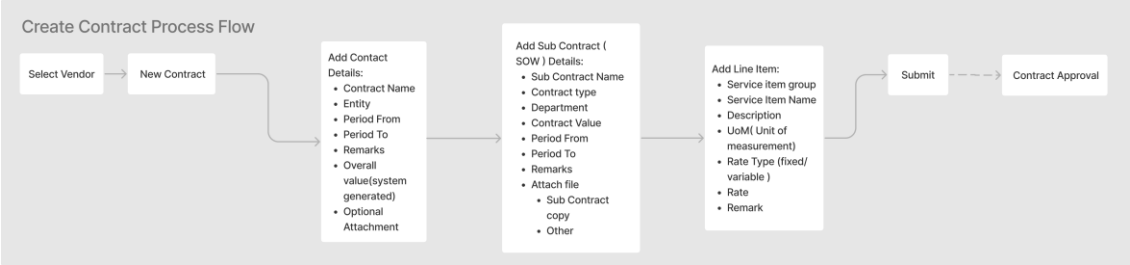


Figure 5: User Flow- Contract Creation

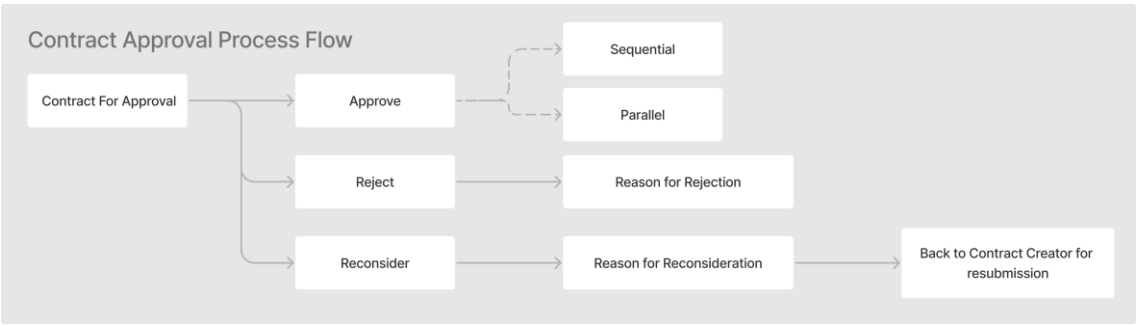


Figure 6: User Flow: Contract Approval

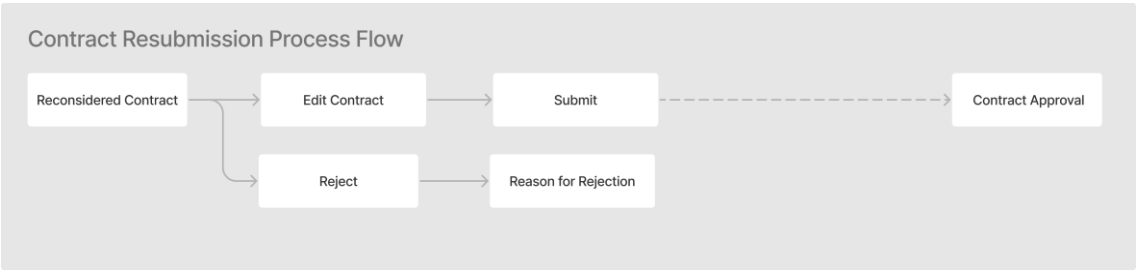


Figure 7: User Flow- Contract Resubmission

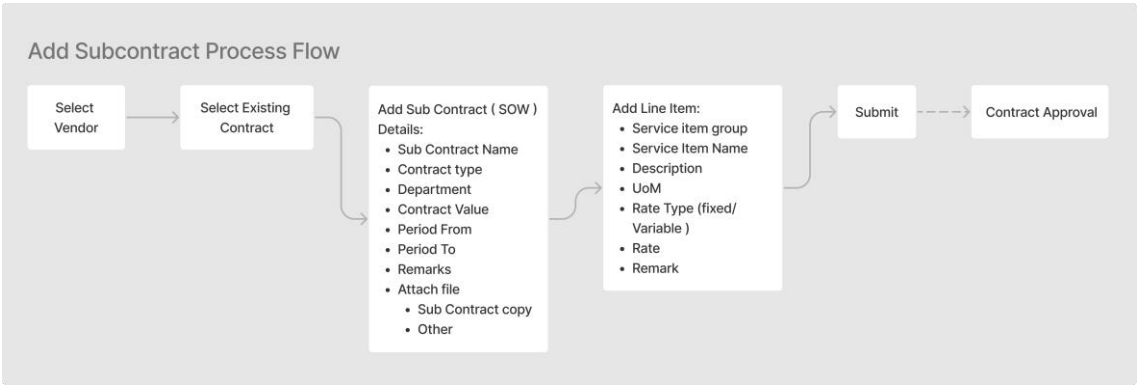


Figure 8: User Flow-Add Statement of Work

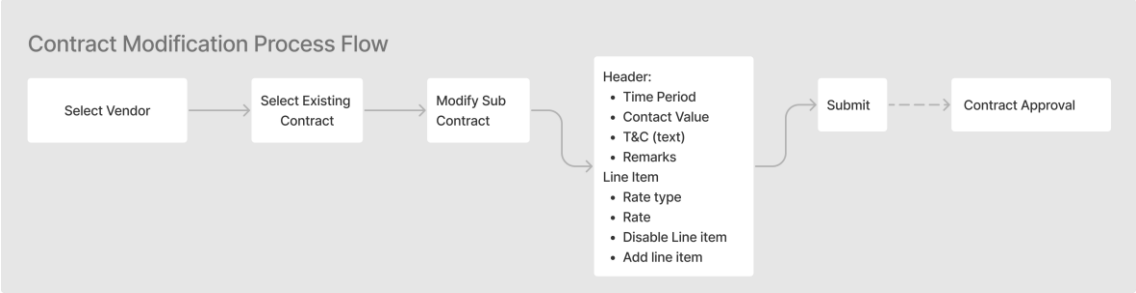


Figure 9: User Flow- Contract/SOW Modification

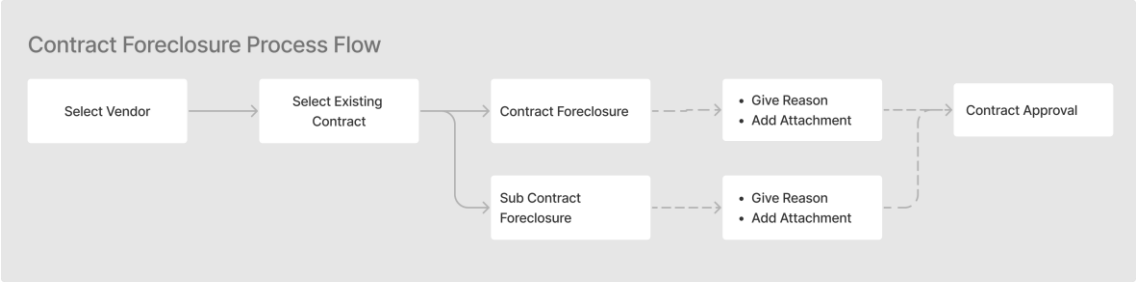


Figure 10: User Flow- Contract/SOW Foreclosure

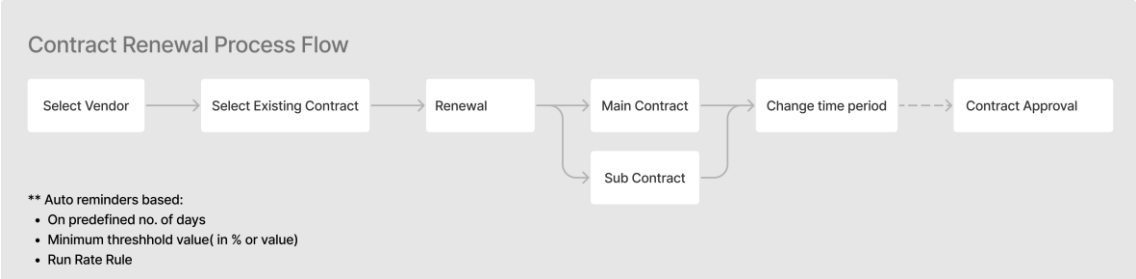


Figure 11: User Flow- Contract Renewal

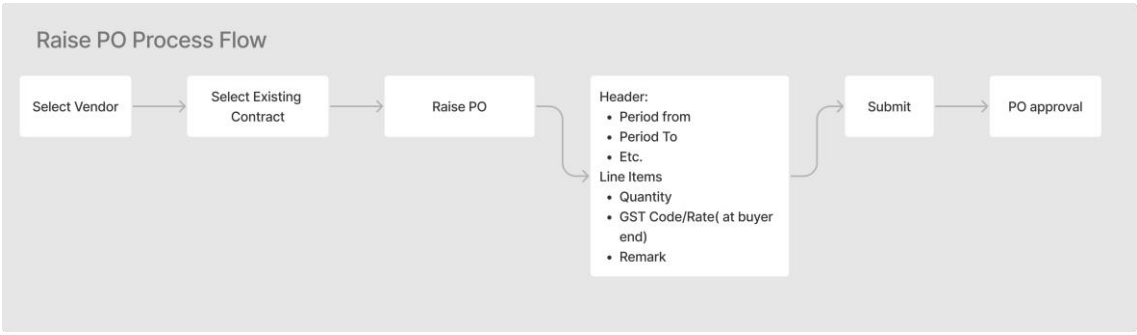


Figure 12: User Flow - Raise Purchase Order

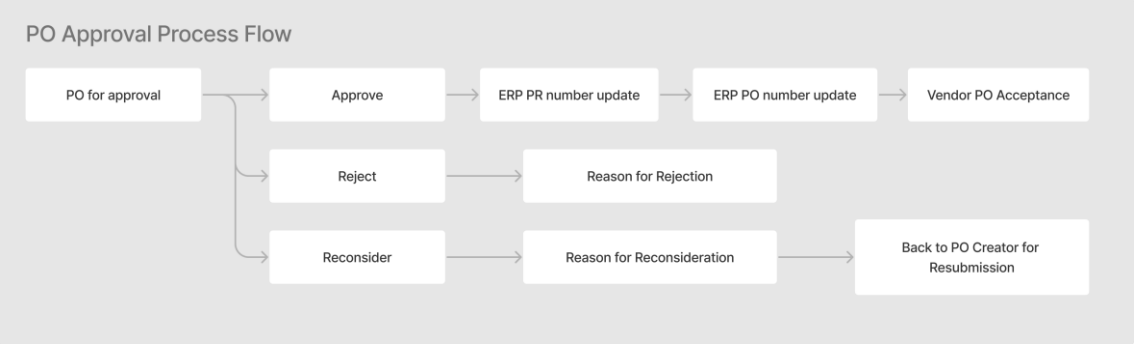


Figure 13:User Flow- PO Approval Process

Concept 1: How independent is SOW from Contract (Diagram)

After the creation of the contract, SOW will be treated as independent entities.

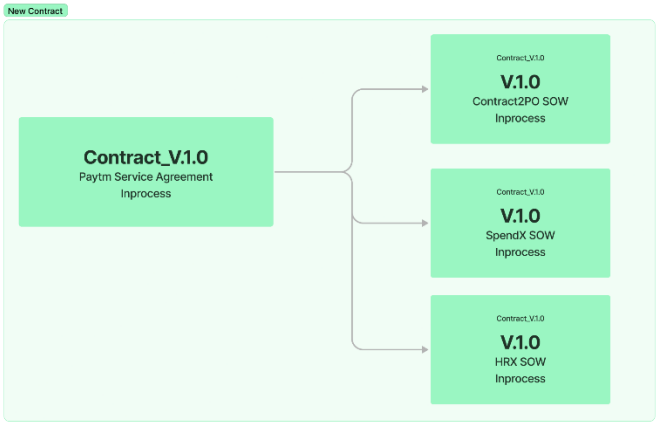


Figure 14: Contract after approval

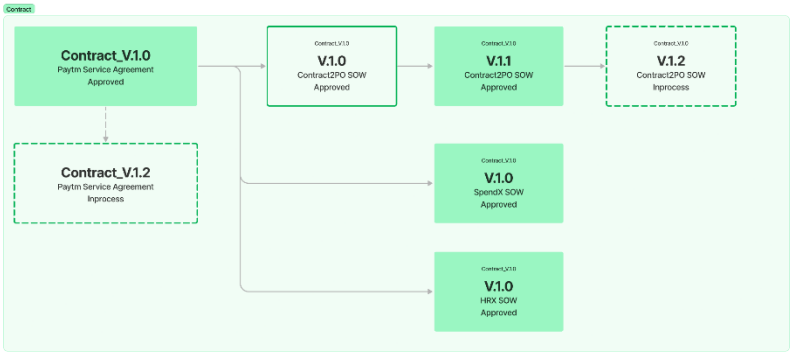


Figure 15: Contract after one of its SOW undergoes modification

Figure 16: Contract after its modified SOW's are approved and rejected

Concept 2: Versioning of Contracts/SOW Modification

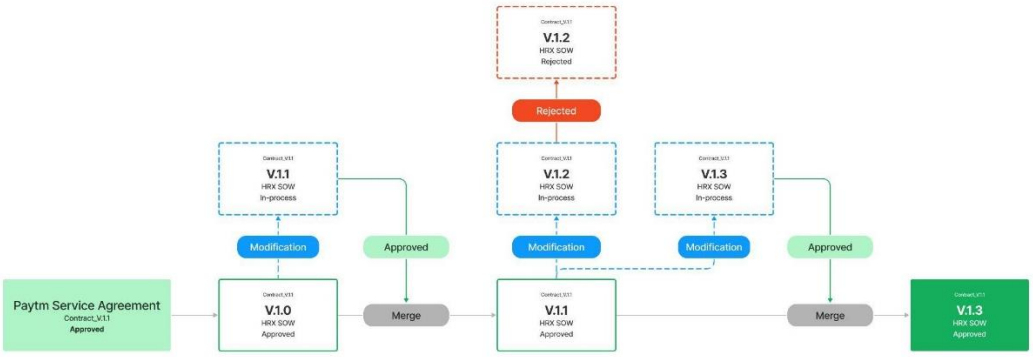


Figure 17: Versioning of Contract and SOW explaination

Explaining whenever a modification is done, a new version is created, which is not replaced,unless and until it has been approved by all the approvers. And users will be able to access the older versions through reports sections.

Chapter 4

INFORMATION ARCHITECTURE

4.1 Contract Creator

Figure 18: Contract Creator Information Architecture

4.2 Contract Approver

Figure 19: Contract Approver Information Architecture

4.3 Contract Viewer

Figure 20: Contract Viewer Information Architecture

4.4 Purchase Order Creator

Figure 21: Purchase order Creator Information Architecture

4.5 Purchase Order Approver

Figure 22: Purchase Order Approver Information Architecture

4.6 Purchase Order Viewer

Figure 23: Purchase Order Viewer Information Architecture

4.7 Vendor

Figure 24: Vendor Information Architecture

Chapter 5

HIGH FIDELITY UI SCREENS

5.1 Contract Creator's UI

5.1.1 Contract Creation

The lengthy flow is divided into different sections to avoid information overload.

Contract creation is a 4 step process:

1. Selecting vendor
2. Adding contract header level details
3. Adding SOW(can be done manually, can be done via excel/can be copied from existing SOW)
4. Preview and create Contract

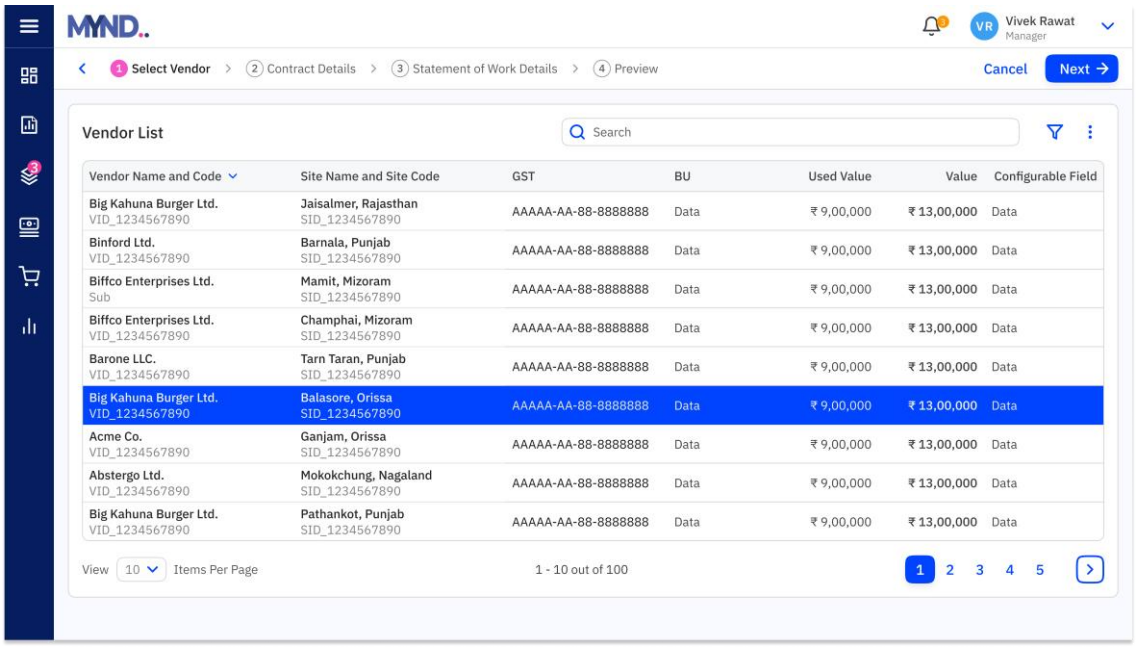
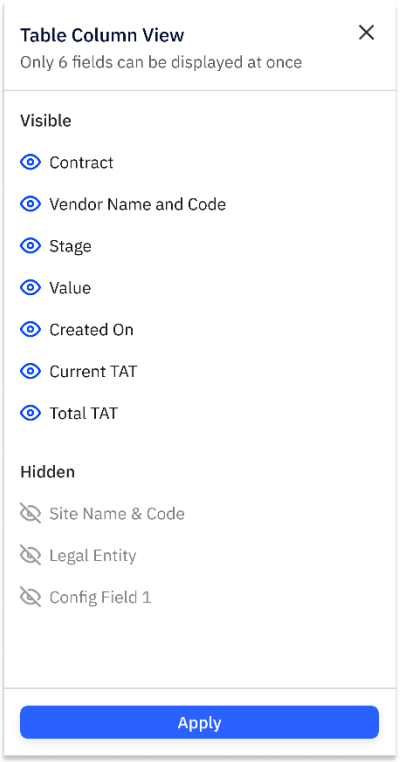


Figure 25: Contract Creation, Vendor Selection UI



For better flexibility of the columns that have to be used in any table a drawer has been given for user to select the relevant columns as per their requirement, making the design adaptable to all the users.

Figure 26: Contract Creation, Vendor Selection, Selection Drawer

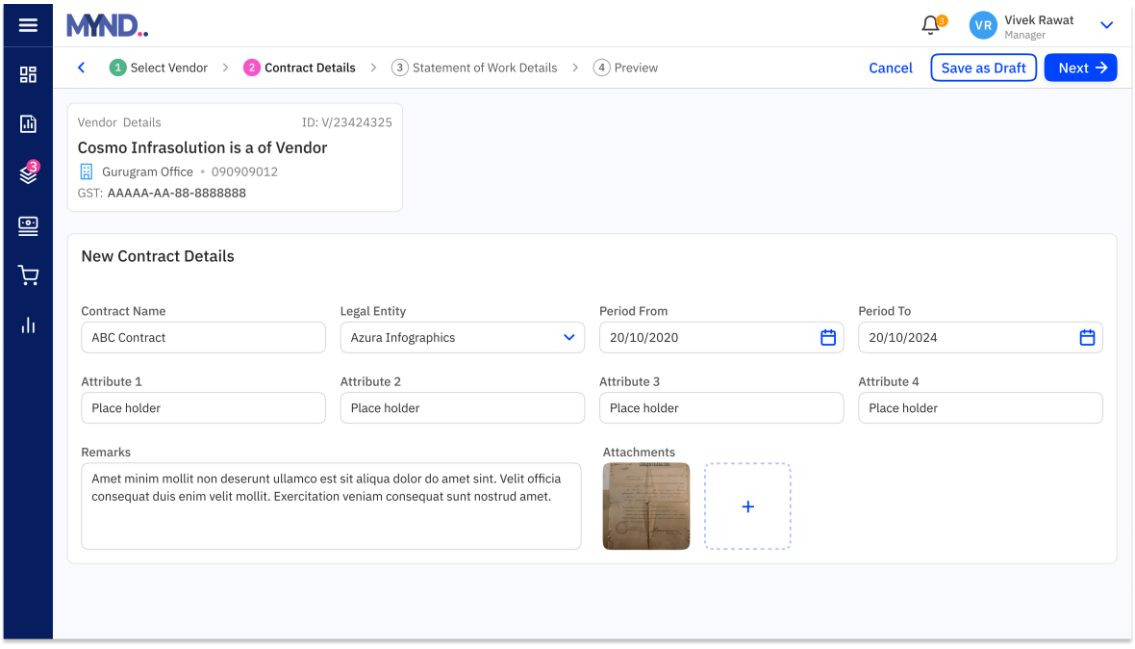


Figure 27: Contract Creation, Contract Details UI

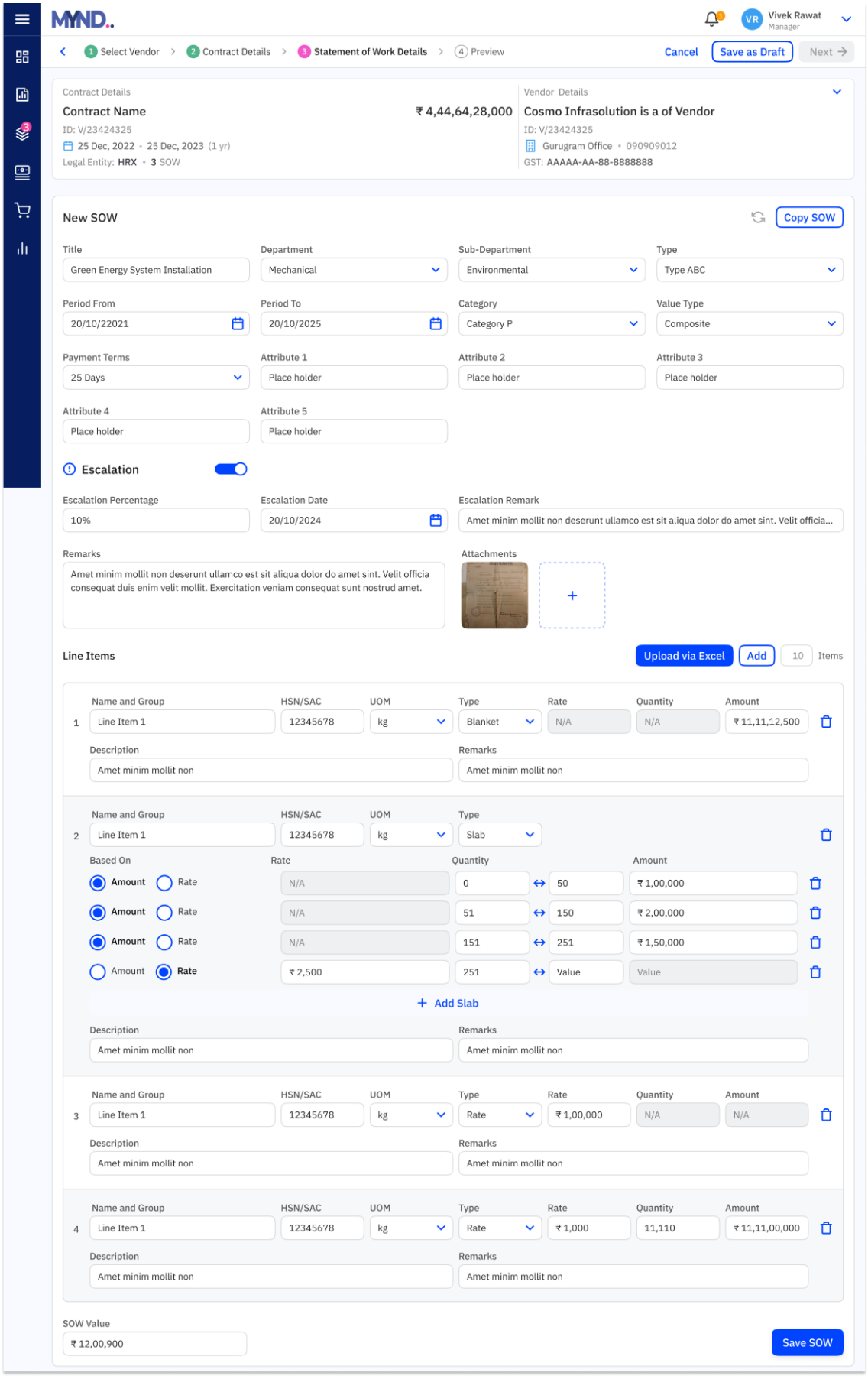


Figure 28: Contract Creation, Statement of Work Details Input UI

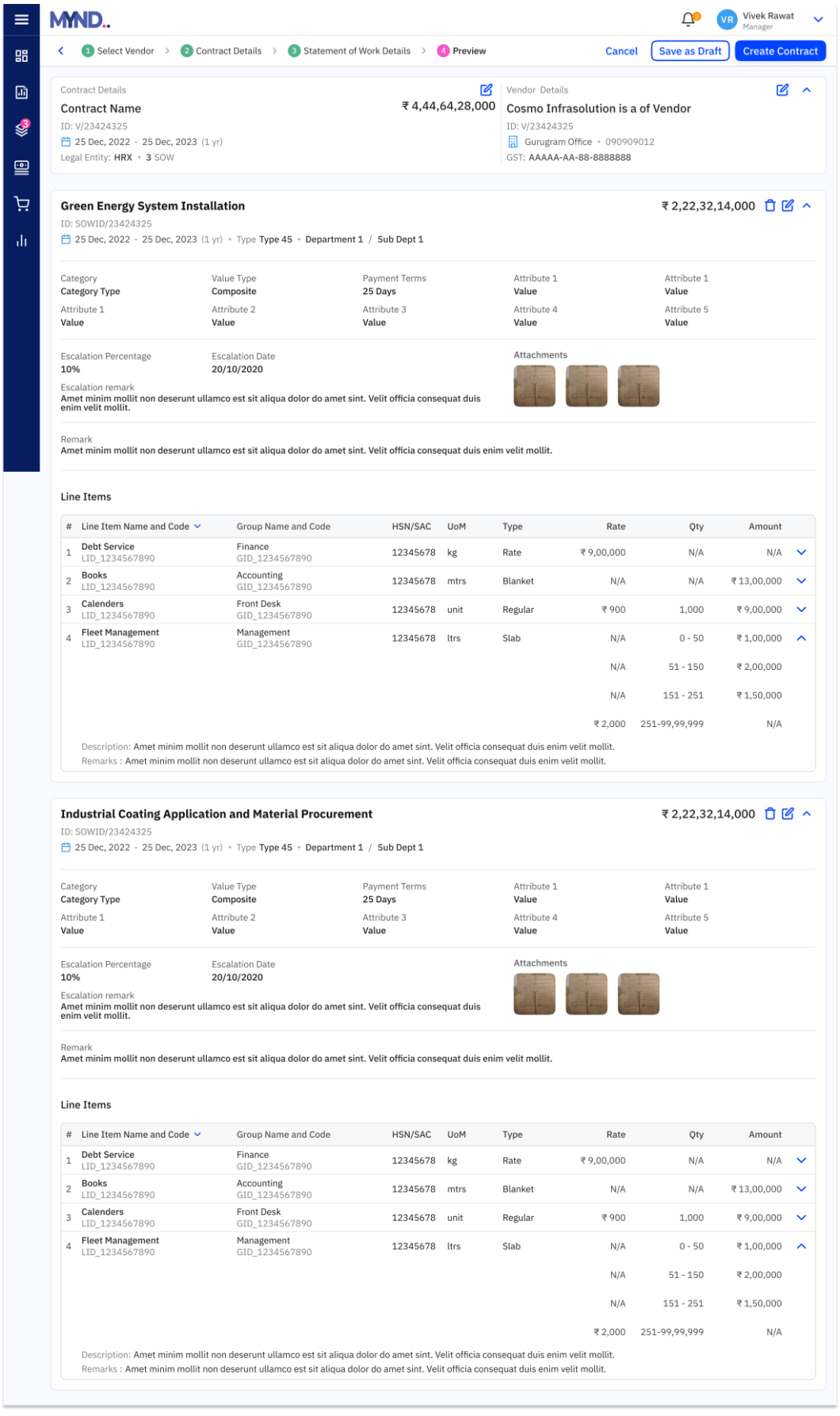


Figure 29: Contract Creation, Contract Details Preview

5.1.2 Contract Tables

All the contracts and statement of work has been segregated into 4 tabs, Pending, Draft Inprocess, Approved and All.

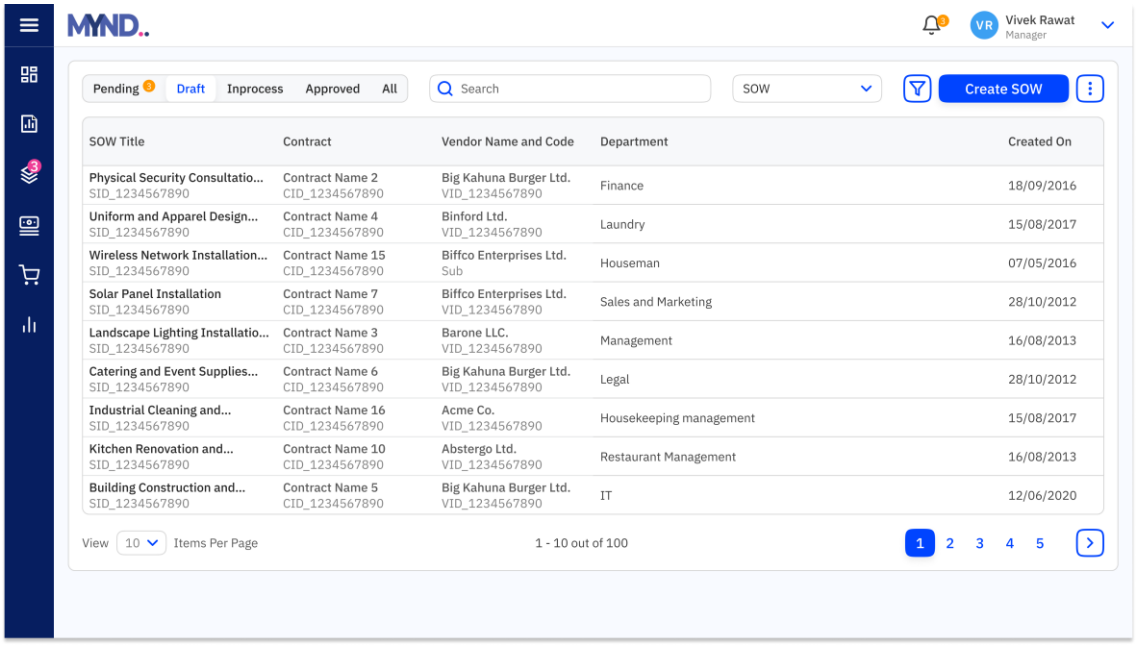


Figure 30: Statement of Work Table, Draft Tab

5.1.3 Contract and Statement of Work View

These views show how the user will see the saved Contracts and Statement of Works

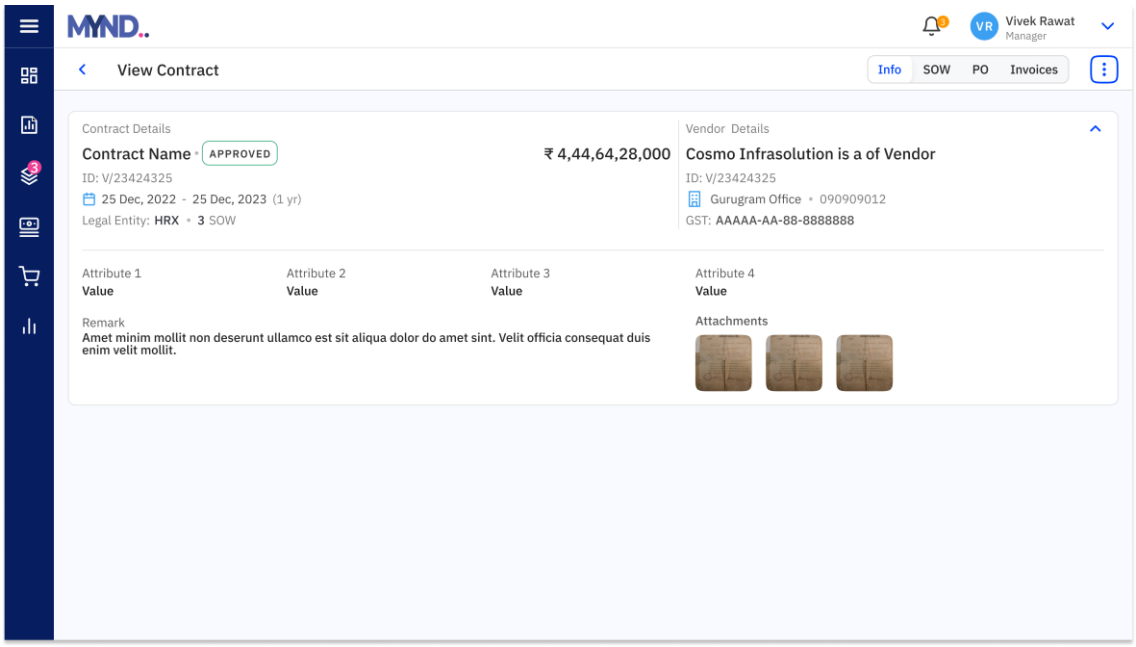


Figure 31: Contract View, Approved

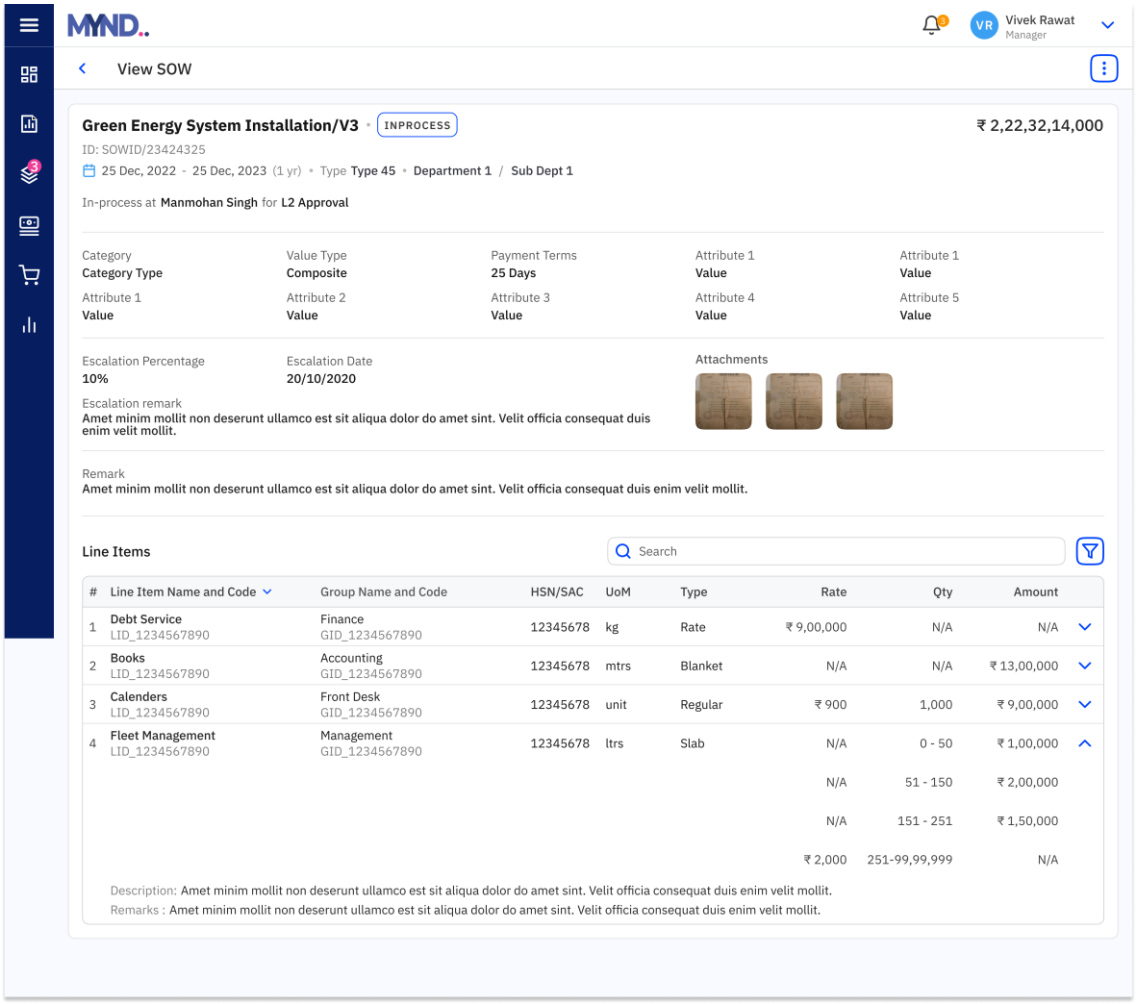


Figure 32: Statement of Work View, Inprocess

5.1.4 Contract and Statement of Work Foreclosure and Time extension

A dialog box pops up with an input of foreclosure date or the extension date, along with the reason

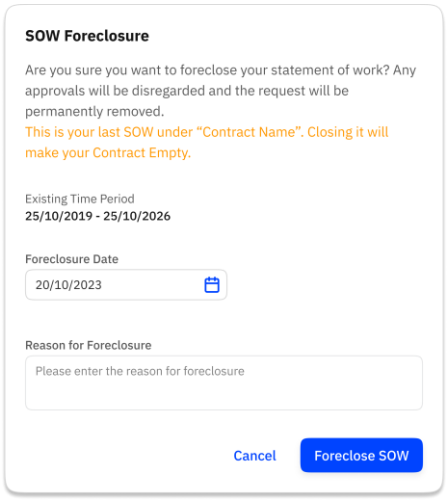


Figure 33: Statement of Work, Foreclosure Dialog Box

5.1.5 Contract and Statement of Work Modification

Post approval the user is allowed to do modifications to the contract or the statement of Work. Modification might even be required in the case when the contract has been reconsidered by the Contract Approver.

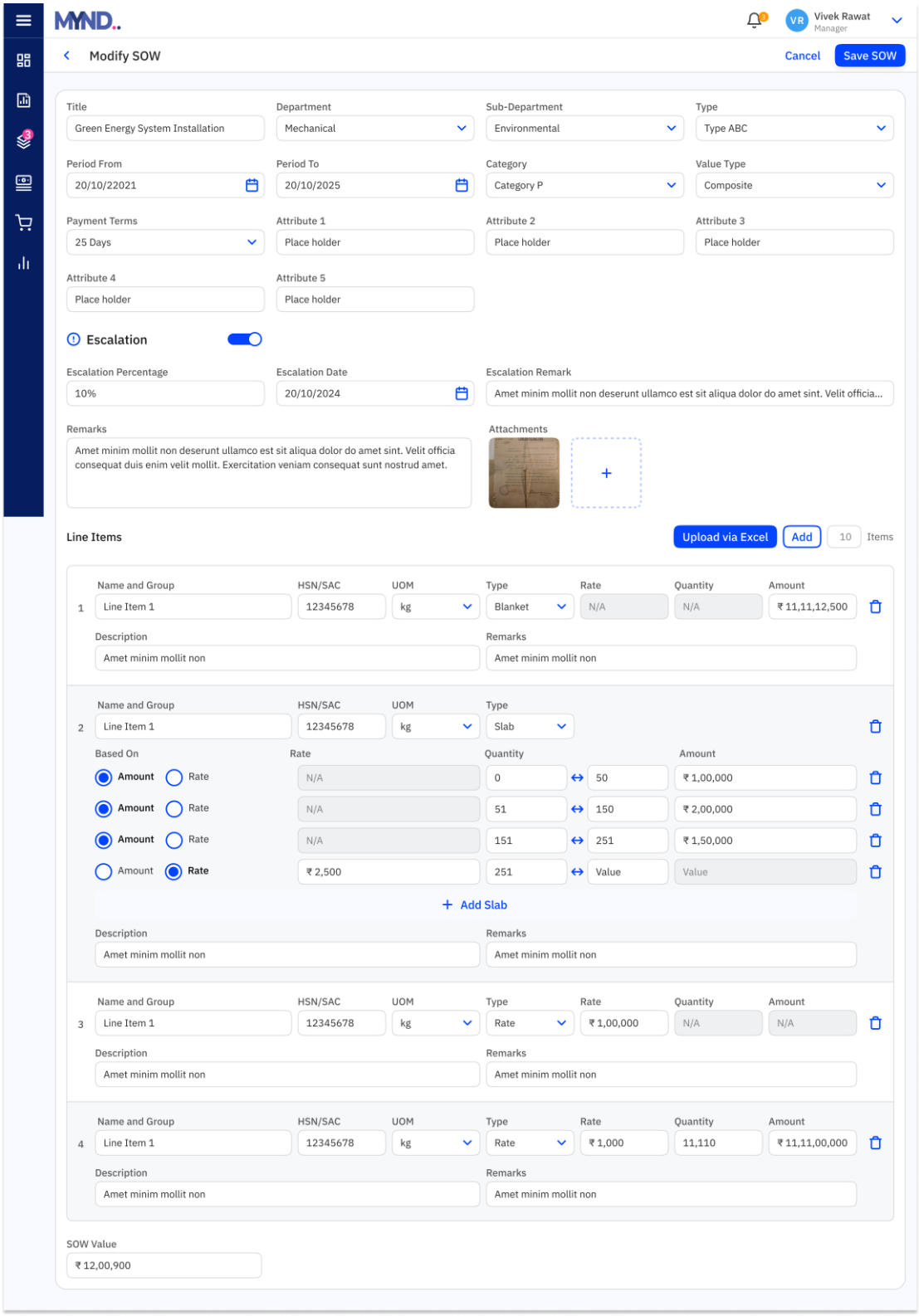
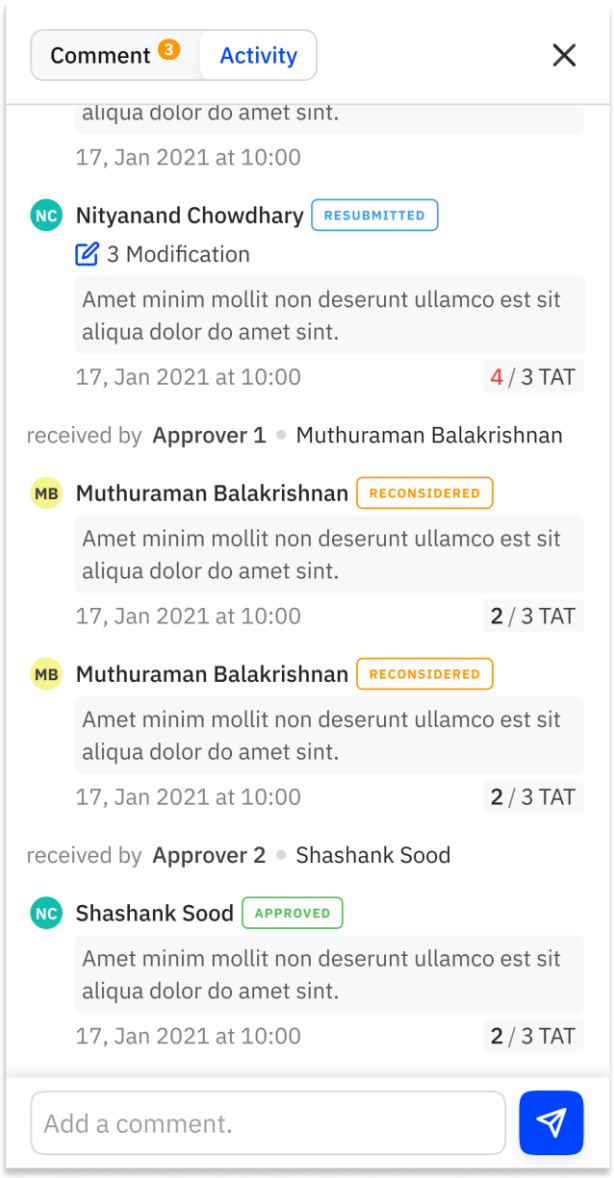


Figure 34: Contract Modification

5.1.6 Activity Pane

This drawer slides whenever the user needs to communicate, it maintains the activity trail of the contract and can be accessed at any point of time.



5.2 Contract Approver's UI

5.2.1 Contract/Statement of Work Tables

All the contracts and statement of work has been segregated into 5 tabs, Pending, Inprocess, Approved and All.

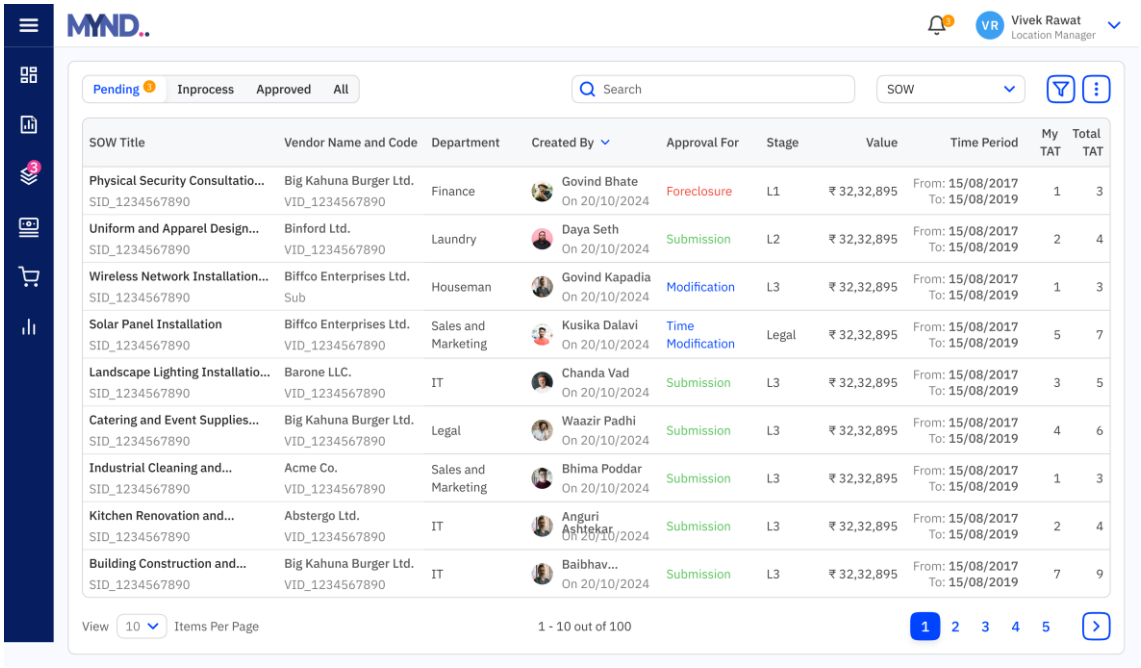


Figure 35: Statement of Work Table, Pending Tab

5.2.2 Contract/Statement of Work Detailed View

Contracts / statement of work detailed view where the approver get an options to:

- Approve
- Reconsider
- Reject

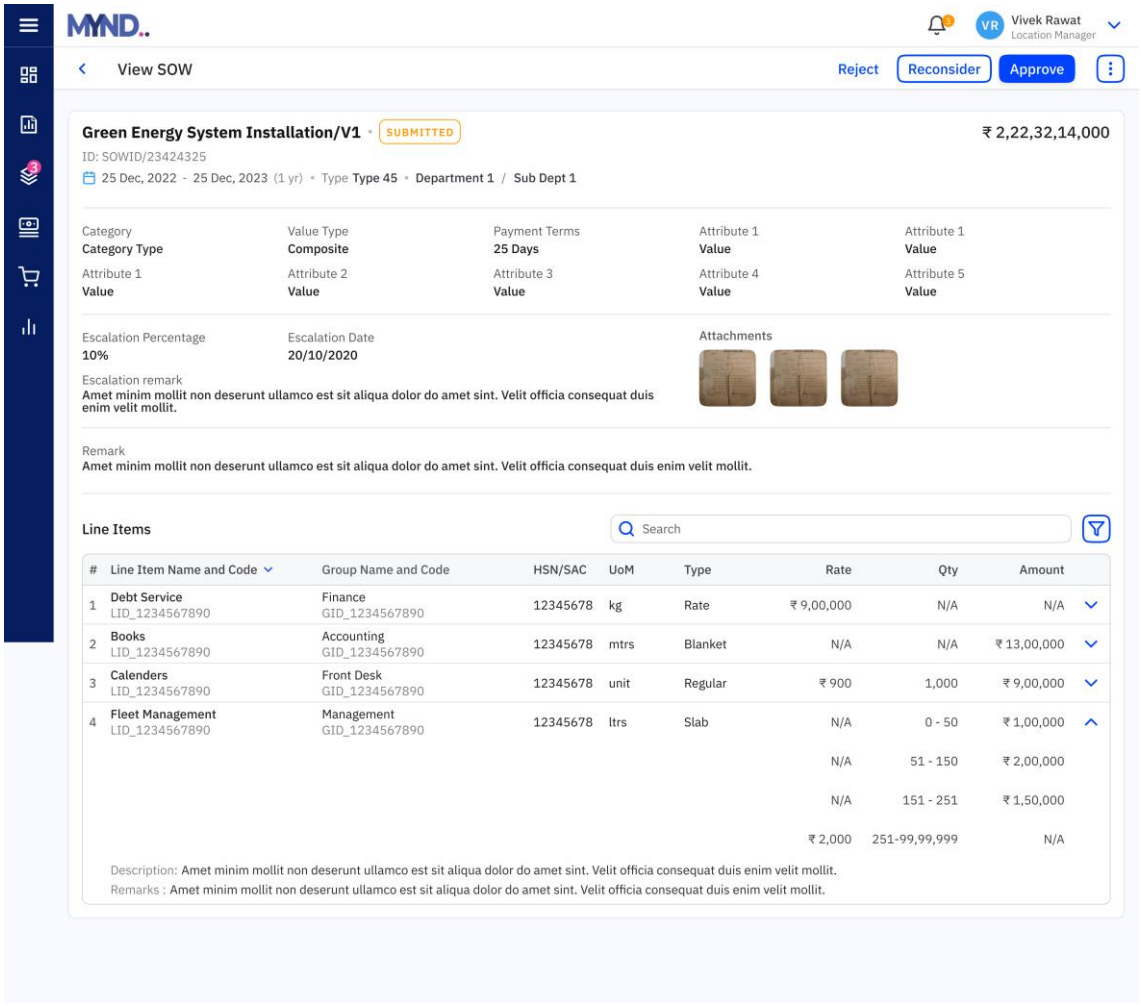


Figure 36: View statement of Work, Submitted View

5.2.3 Approval Dialog Box

The following dialog box opens and comes with a default approval message which can be edited.

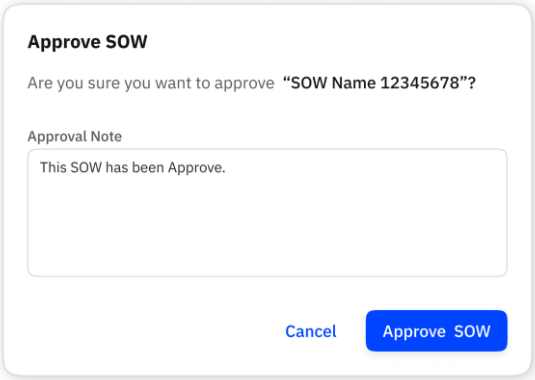


Figure 37: Approval Dialog Box

5.2.4 Reconsider Dialog Box

The following dialog box opens and which asks to whom do you want to reconsider along with your reason for reconsideration. You also get an option to not start the Approval process rather directly redirect it to you after changes.

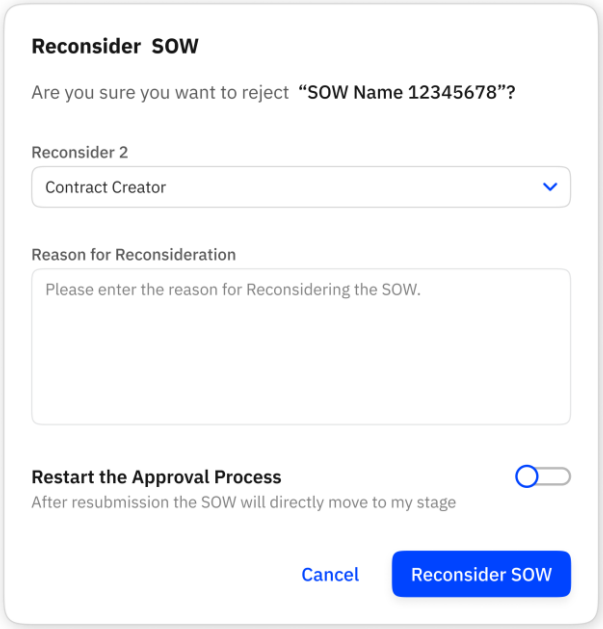


Figure 38: Reconsider Dialog Box

5.2.5 Approval Dialog Box

The following

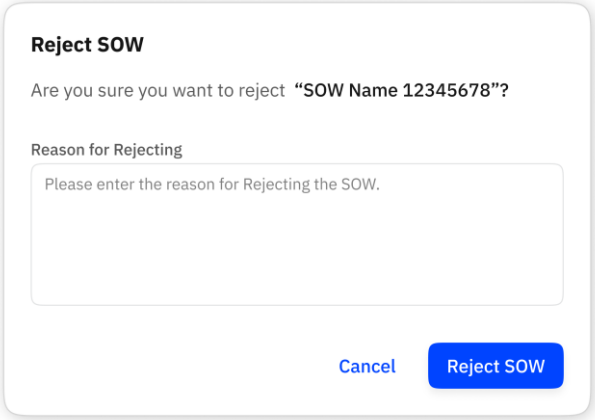


Figure 39: Approval Dialog Box

5.2.6 Comparison view between versions.

When there are some modifications done in Contract or SOW and it is sent for Approval, the approver gets a comparison view where he can compare the modifications with the past versions, helping him the approval cycle.

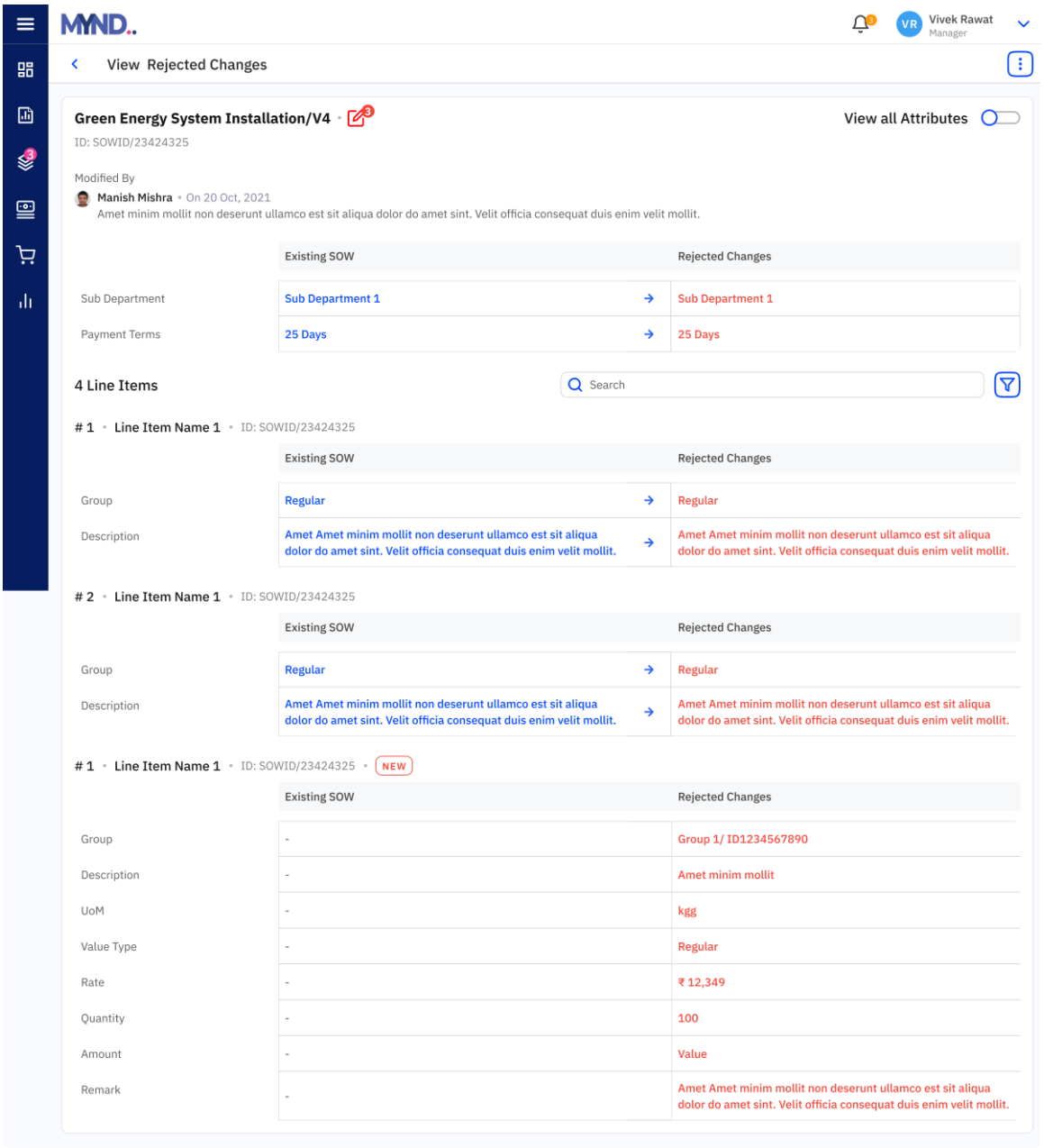


Figure 40: Comparison view of modifies changes

5.3 Purchase Order Creator's UI

5.3.1 Purchase Order Creation

The lengthy flow is divided into different sections to avoid information overload.

Purchase Order creation is a 4 step process:

1. Selecting vendor
2. Selecting Statement of work
3. Adding Quantities to line items
4. Adding Billing and shipping details

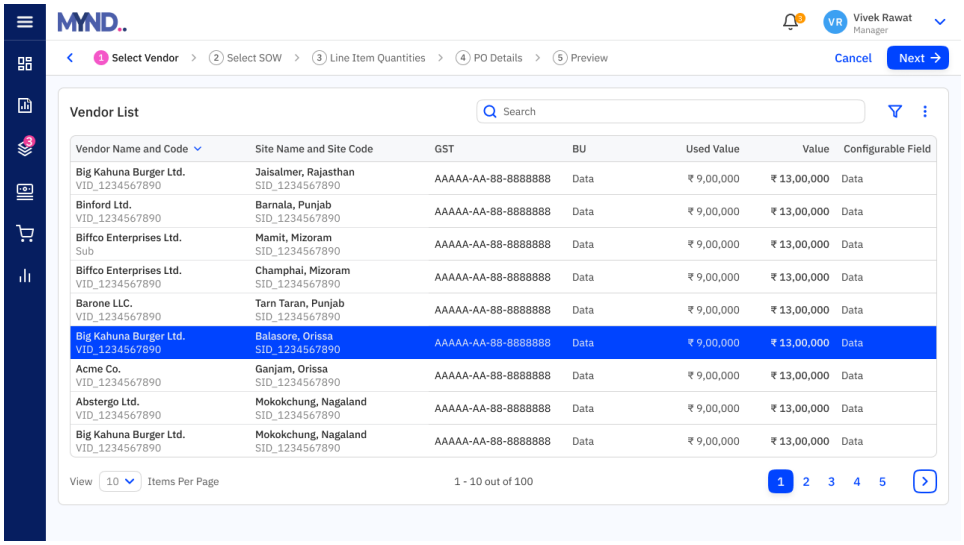


Figure 41: Purchase Order Creation, Vendor Selection

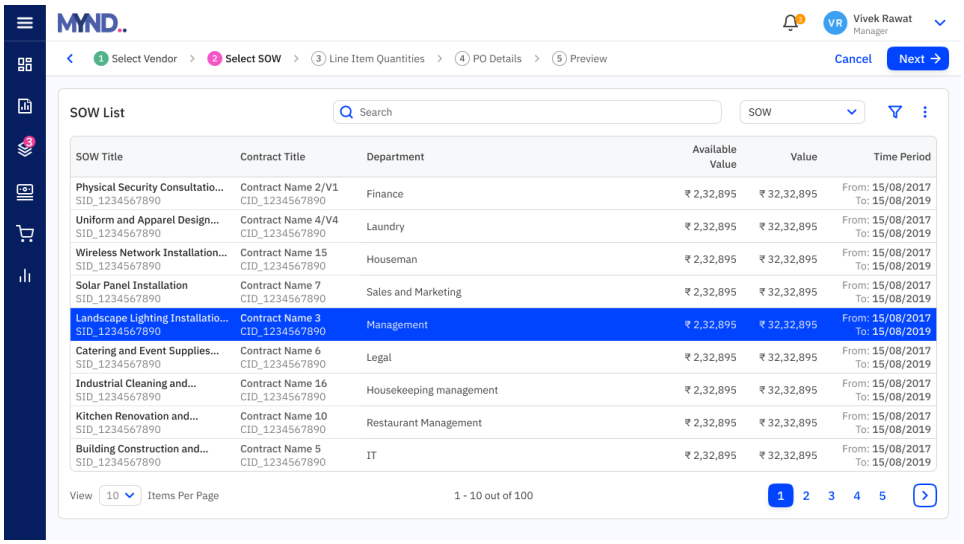


Figure 42: Purchase Order Creation, Statement of Work Selection

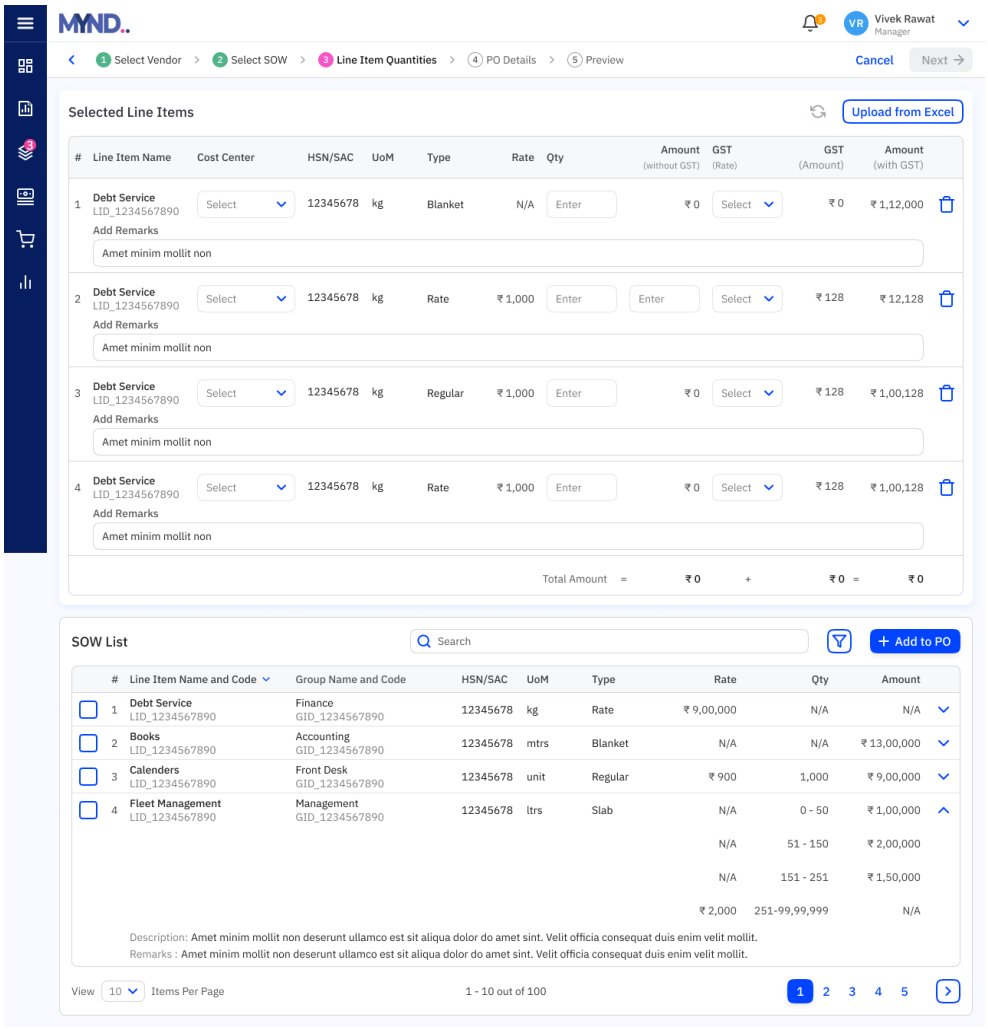


Figure 43: Purchase Order Creation, Line Item Quantities addition

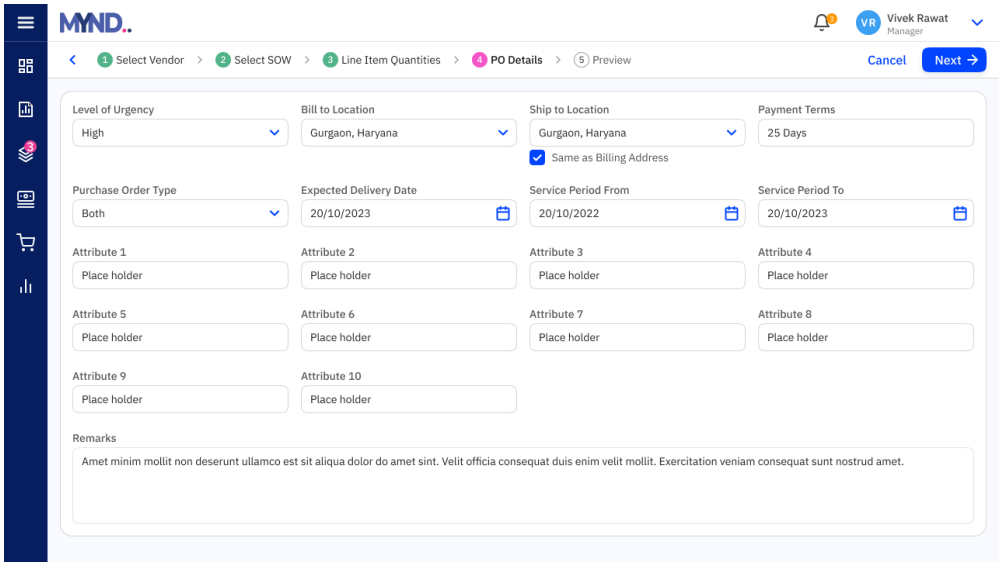


Figure 44: Purchase Order Creation, Purchase Order Details

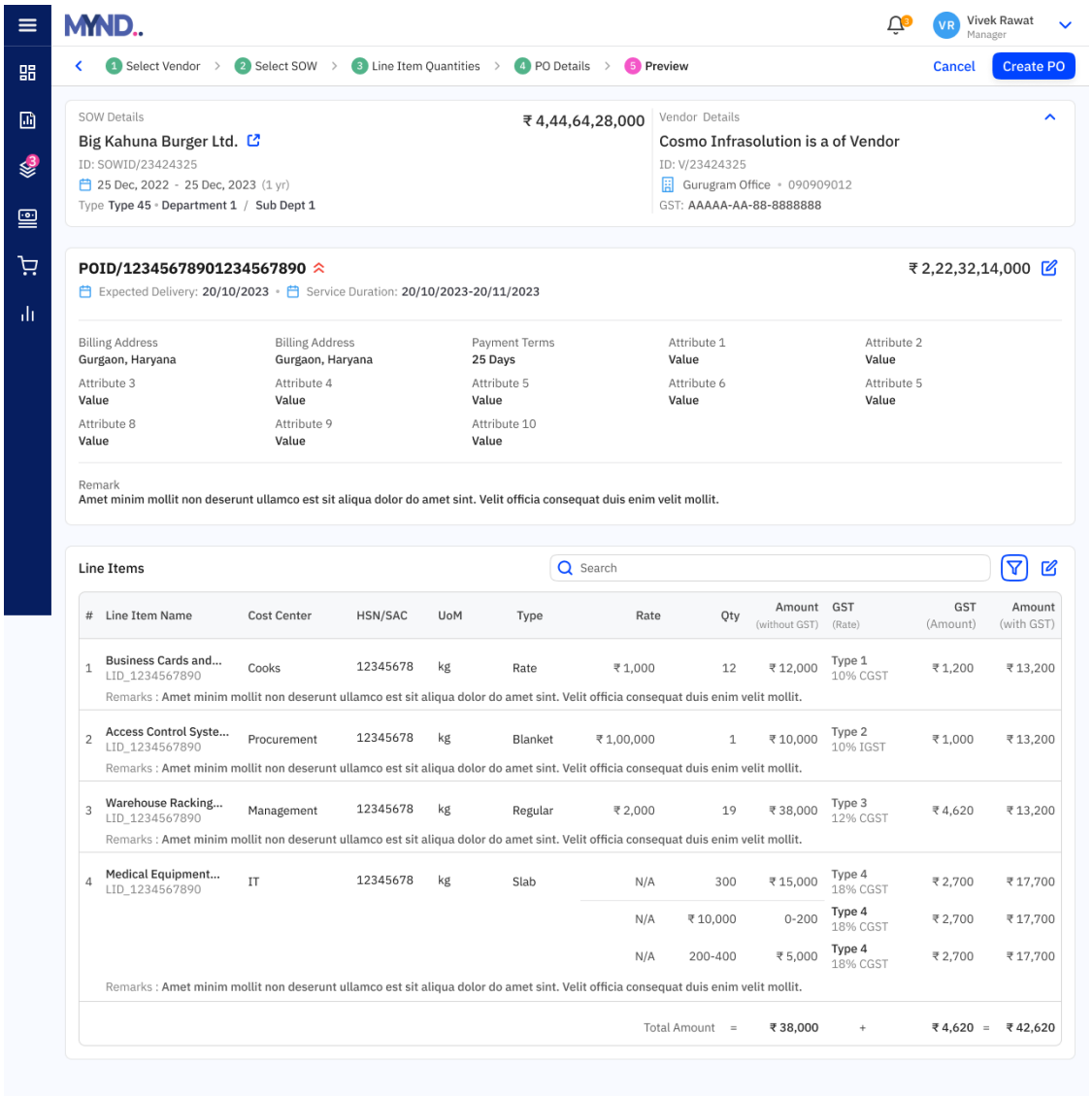


Figure 45: Purchase Order Creation, Preview

5.3.2 Purchase Order Tables

All PO have been segregated into 5 tabs, Pending, Inprocess, Approved and All.

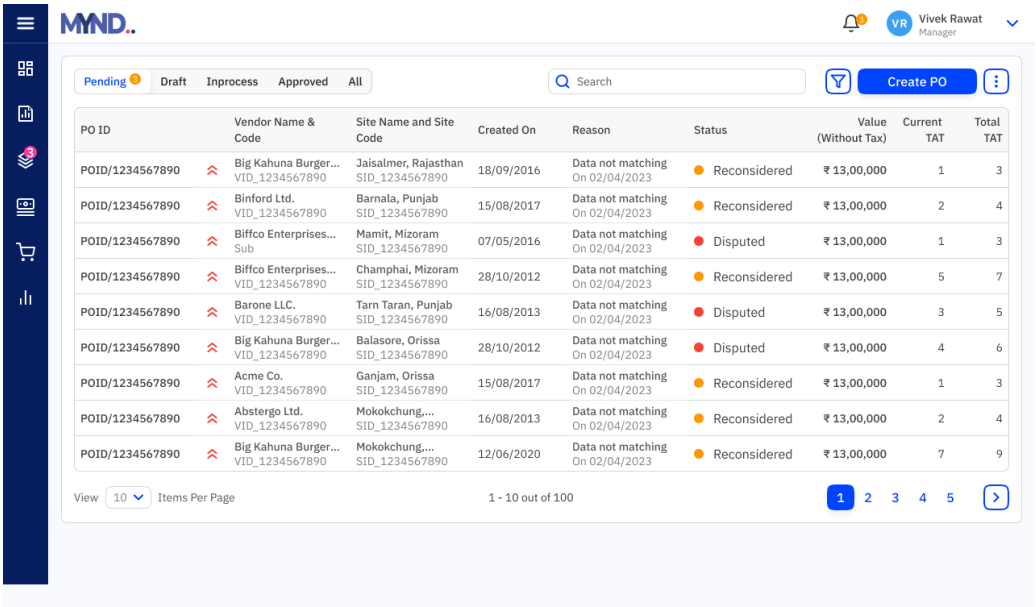


Figure 46: Purchase Order Table

5.3.3 Purchase Order View

These views show how the user will see the saved Purchase Orders.

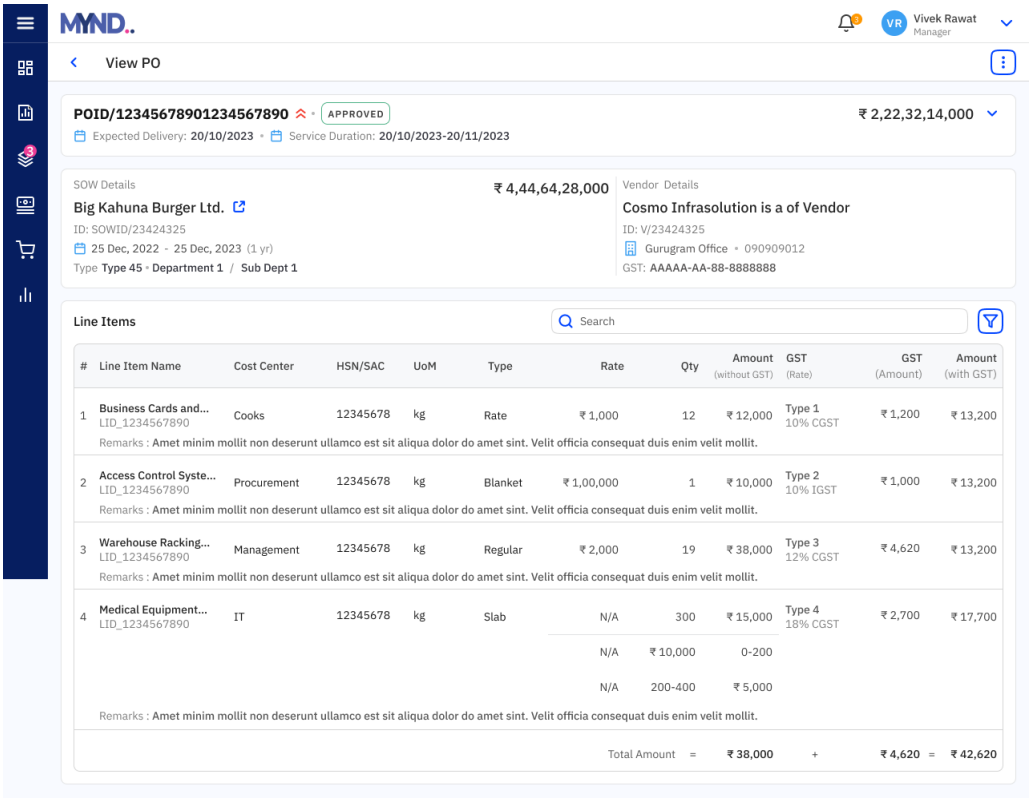


Figure 47: Purchase Order View

5.3.4 Purchase Order Bulk Shortclose

User can select multiple Purchase orders which have to be shortclosed and Bulk Shortclose

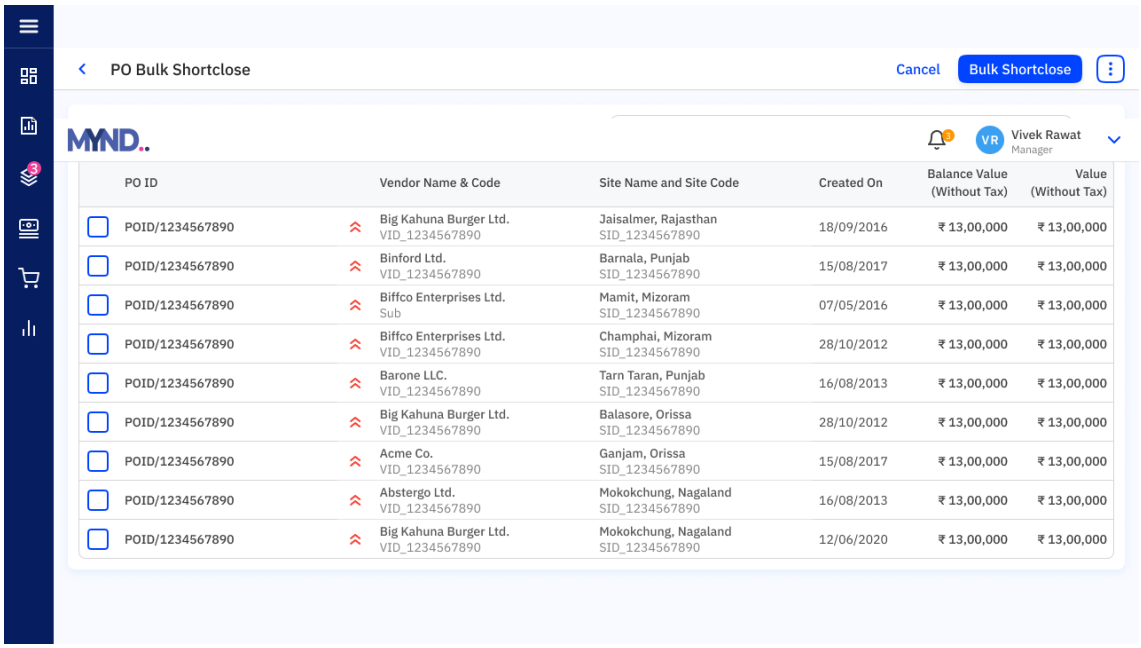


Figure 48: Purchase Order Bulk Shortclose Selection

5.3.5 Purchase Order Partial Short close

User can select desired line items and even mention their quantities which have to be short closed and then partially short closed.

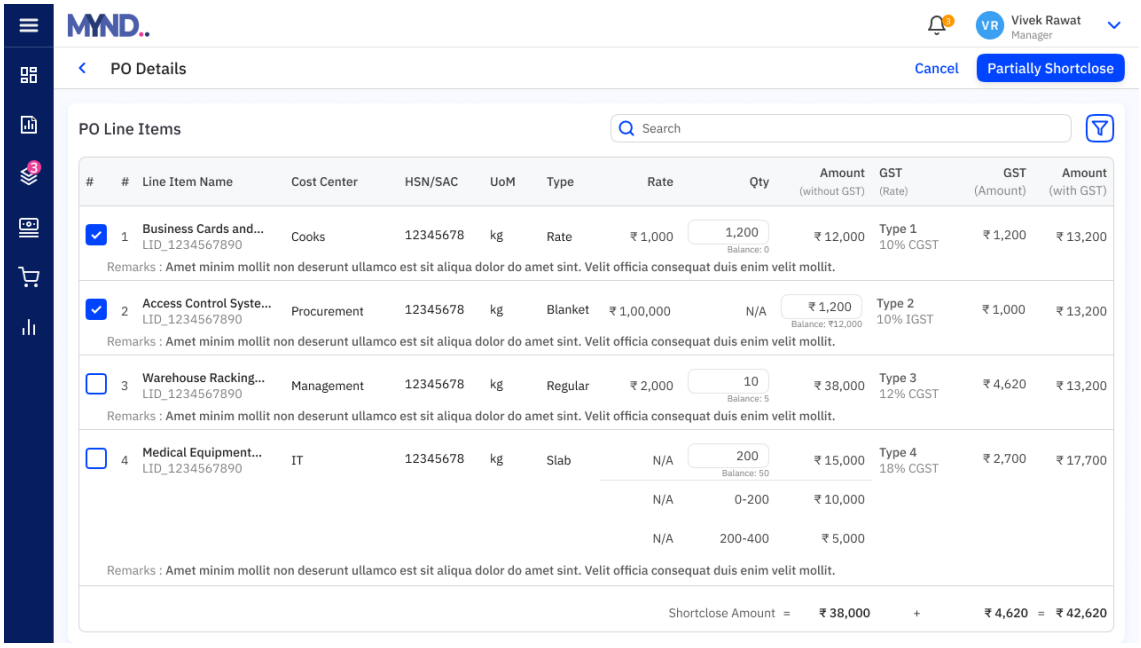


Figure 49: Purchase Order Partial Short closing, selecting line items and adding their quantities

5.3.6 Purchase Order Fully Short close Dialog Box

User can short close an entire PO at a time and the following dialog box will open up.

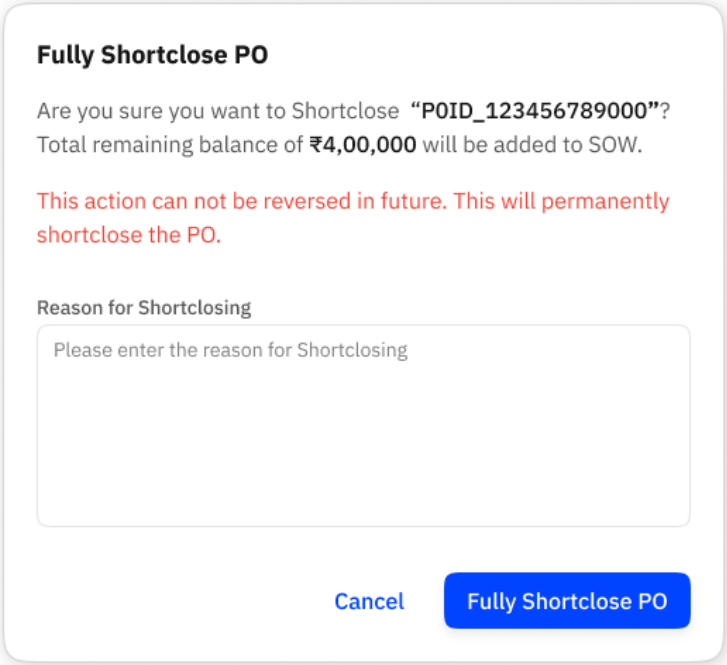


Figure 50: Purchase Order Fully Short close Dialog Box

5.4 Purchase Order Approver's UI

5.4.1 Purchase Order Tables

All the PO have been segregated into 4 tabs, Pending, In process, Approved and All.

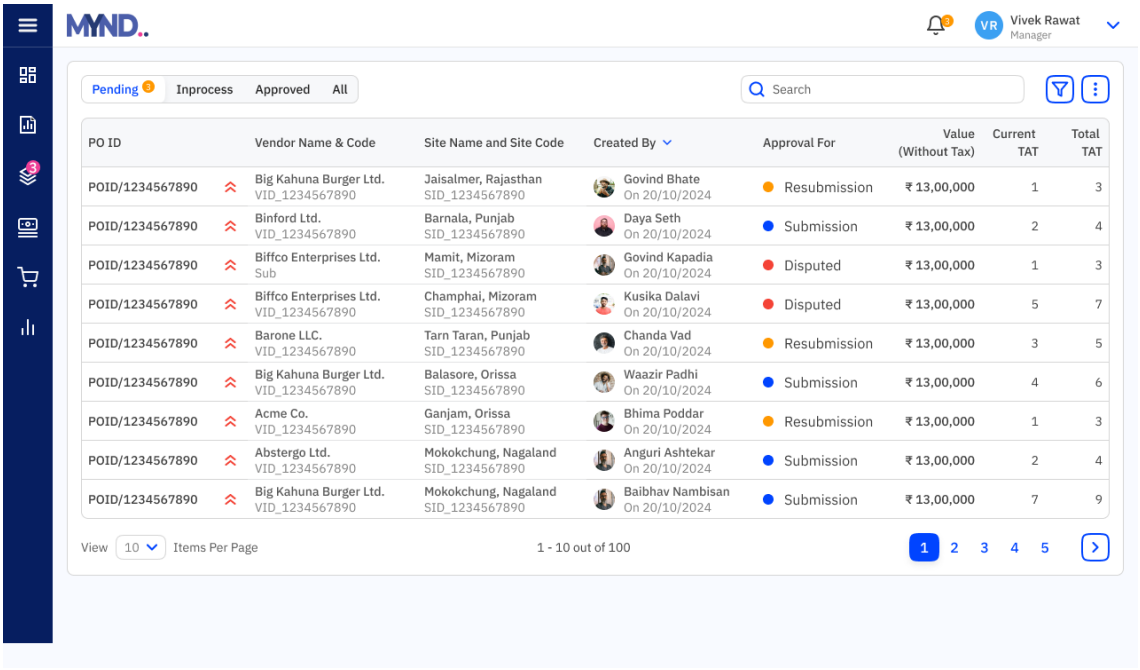


Figure 51: Purchase Order Table, Pending Tab

5.4.2 Purchase Order Detailed View

Purchase Order detailed view where the approver get an options to:

- Approve
- Reconsider
- Reject

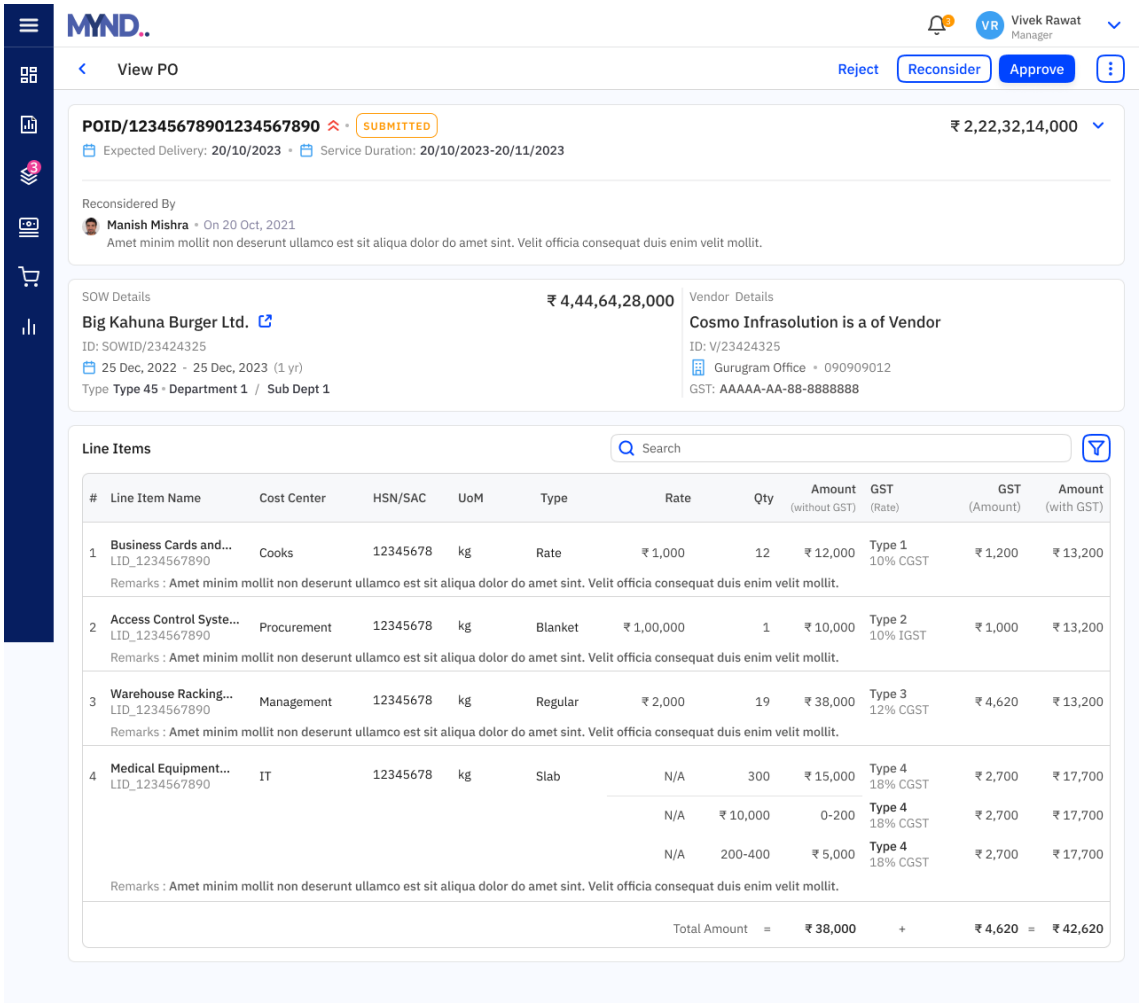


Figure 52: View Purchase Order, Submitted View

5.4.3 Approval Dialog Box

The following dialog box opens and comes with a default approval message which can be edited.

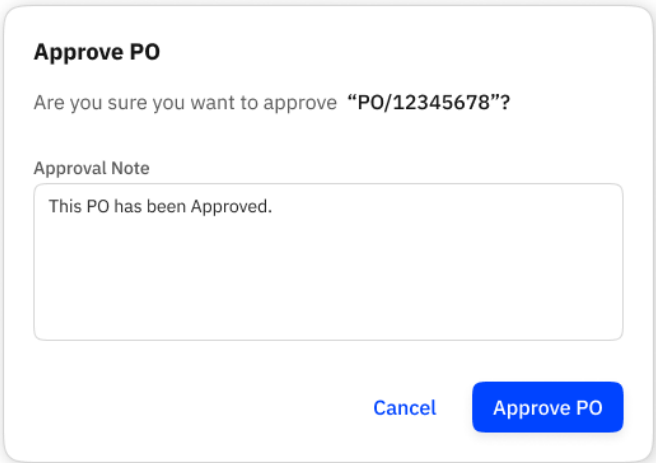


Figure 53: Approval Dialog Box

5.4.4 Reconsider Dialog Box

The following dialog box opens and which asks to whom do you want to reconsider along with your reason for reconsideration. You also get an option to not start the Approval process rather directly redirect it to you after changes.

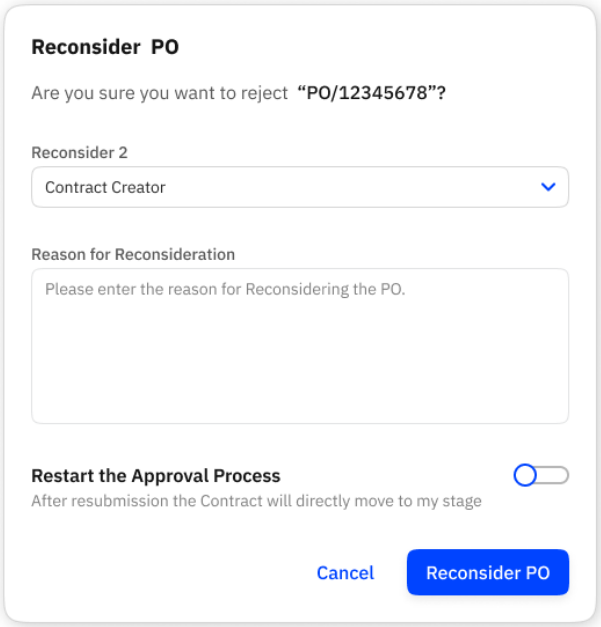


Figure 54: Reconsider Dialog Box

5.2.5 Approval Dialog Box

The following

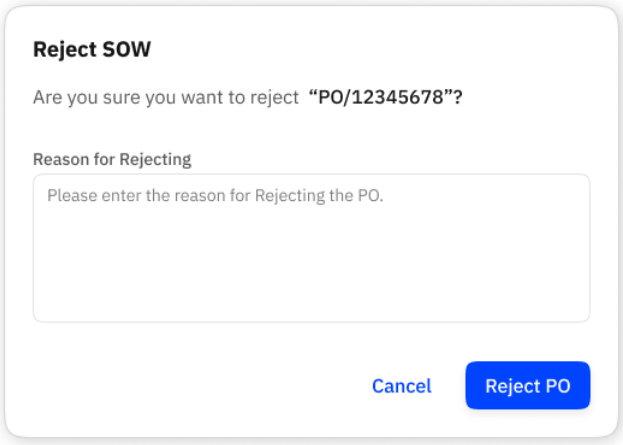


Figure 55: Approval Dialog Box

5.2.6 Comparison view between versions.

When there are some modifications done in a Purchase Order and it is sent for Approval, the approver gets a comparison view where he can compare the modifications with the past versions, helping him the approval cycle.

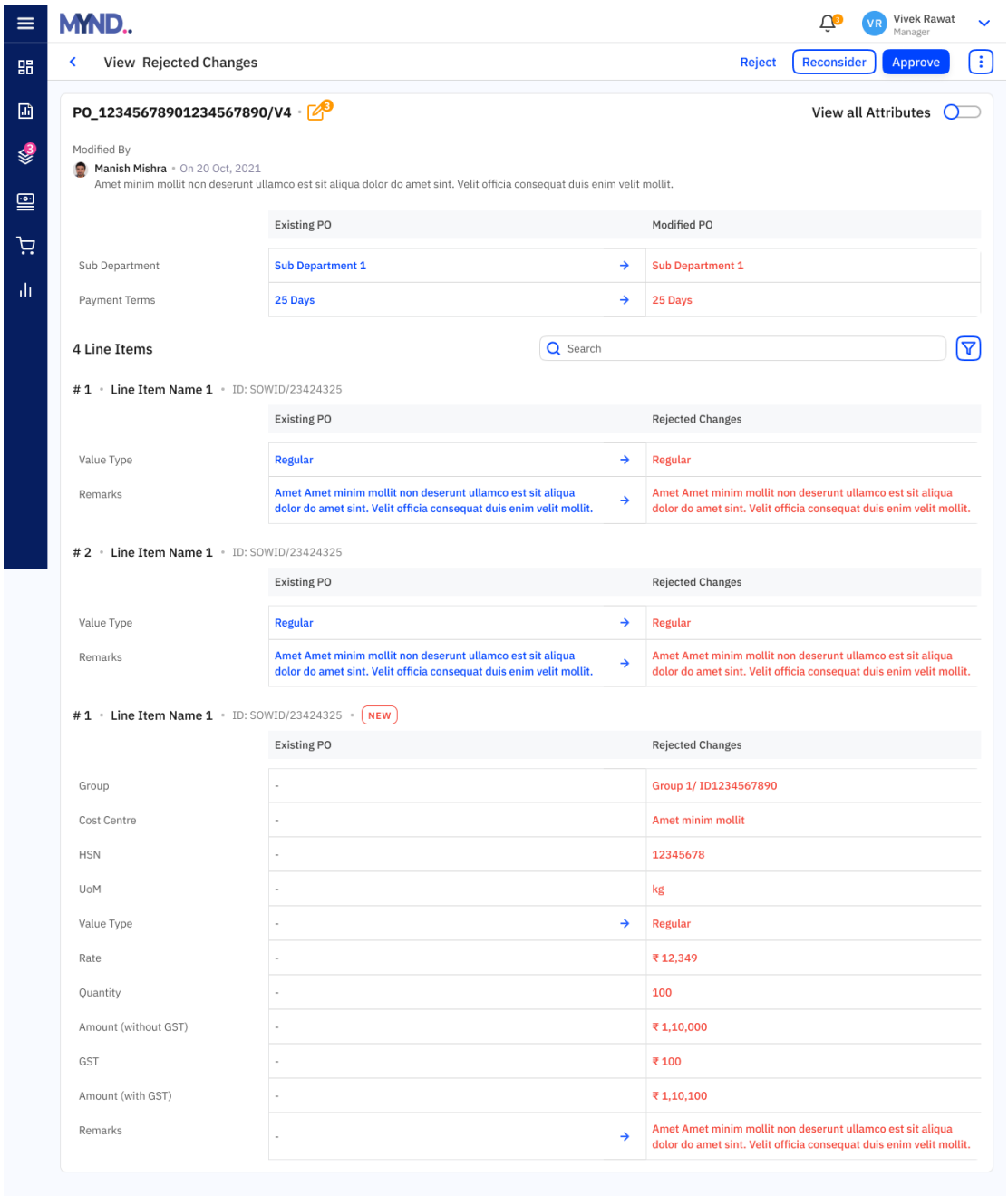


Figure 56: Comparison view of modifies changes

5.5 Vendor's UI

5.5.1 Purchase Order Tables

All the PO have been segregated into 4 tabs, Pending, In dispute, Accepted and All.

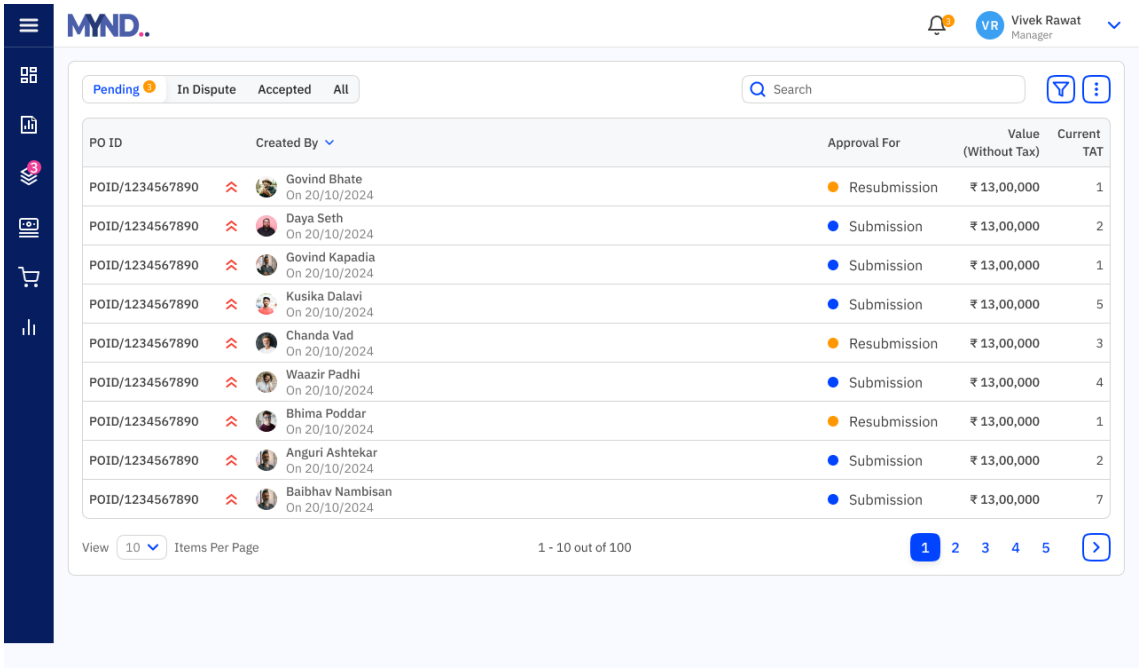


Figure 57Purchase Order Table, Pending Tab

5.5.2 Purchase Order Detailed View

Purchase Order detailed view where the approver get an options to:

- Accept
- Raise Dispute

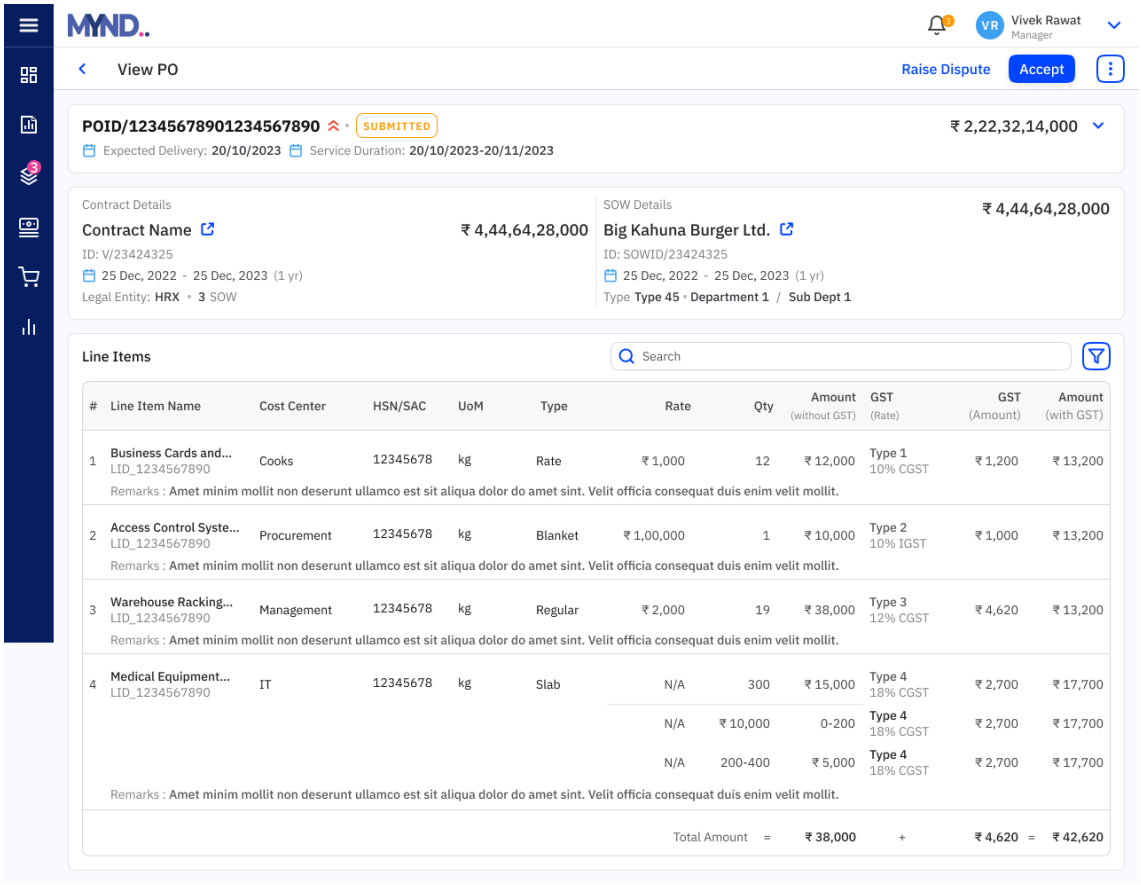


Figure 58: View Purchase Order, Submitted View

5.4.3 Acceptance Dialog Box

The following dialog box opens and comes with a default acceptance message which can be edited.

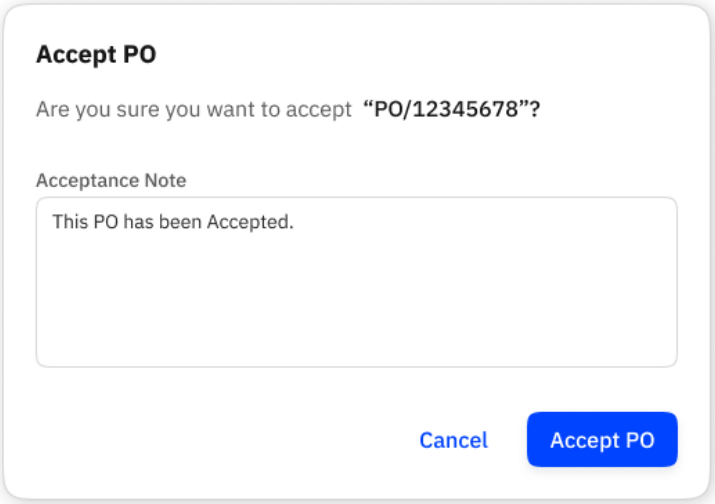


Figure 59: Acceptance Dialog Box

5.5.4 Dispute Dialog Box Dialog Box

The following dialog box opens and which asks to enter the reason for dispute.

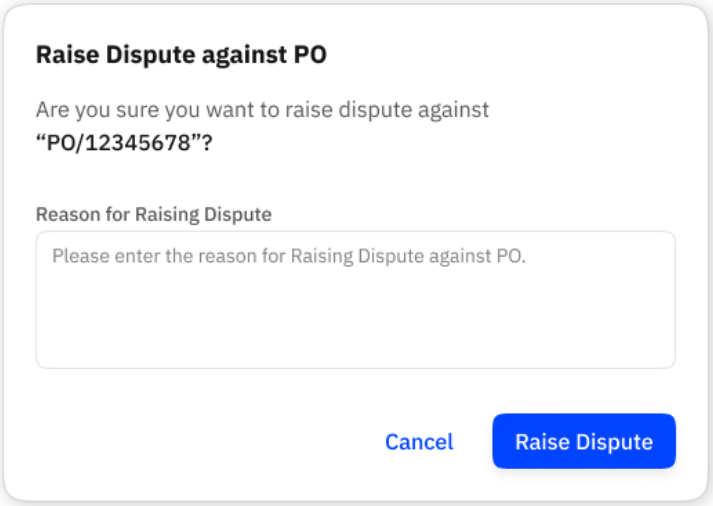


Figure 60: Dispute Dialog Box

5.6 Dashboards

5.6.1 Contract Creator Dashboard

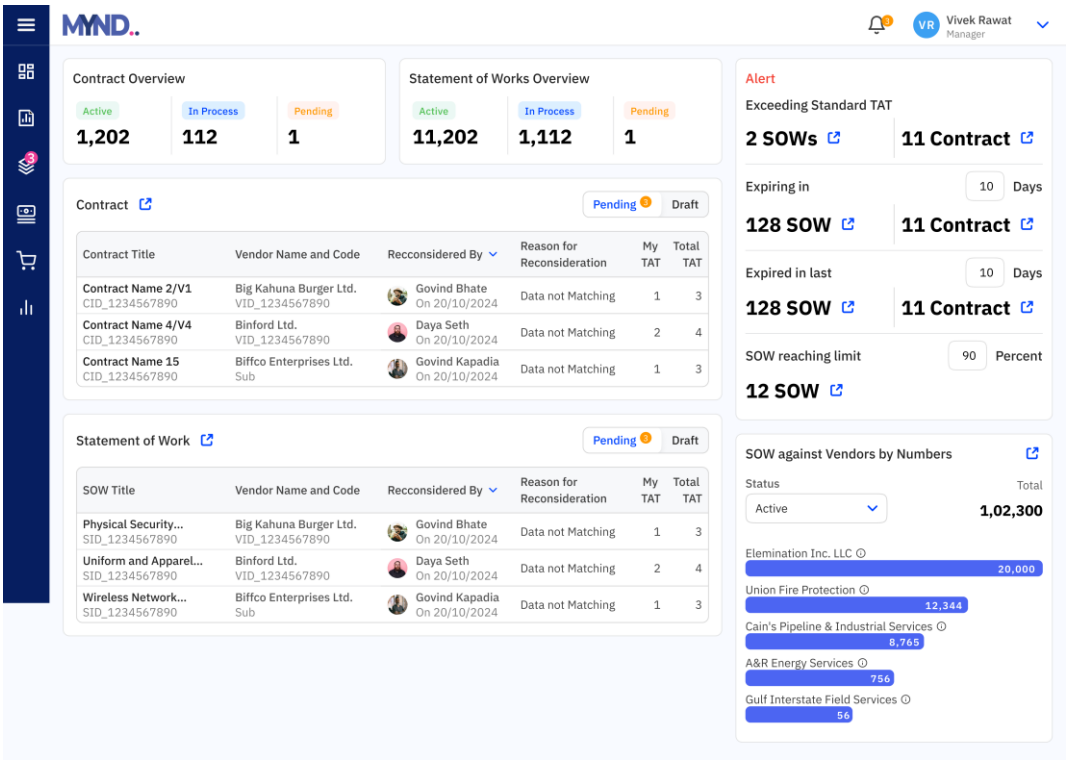


Figure 61: Dashboard Contract creator

5.6.2 Contract Approver dashboard

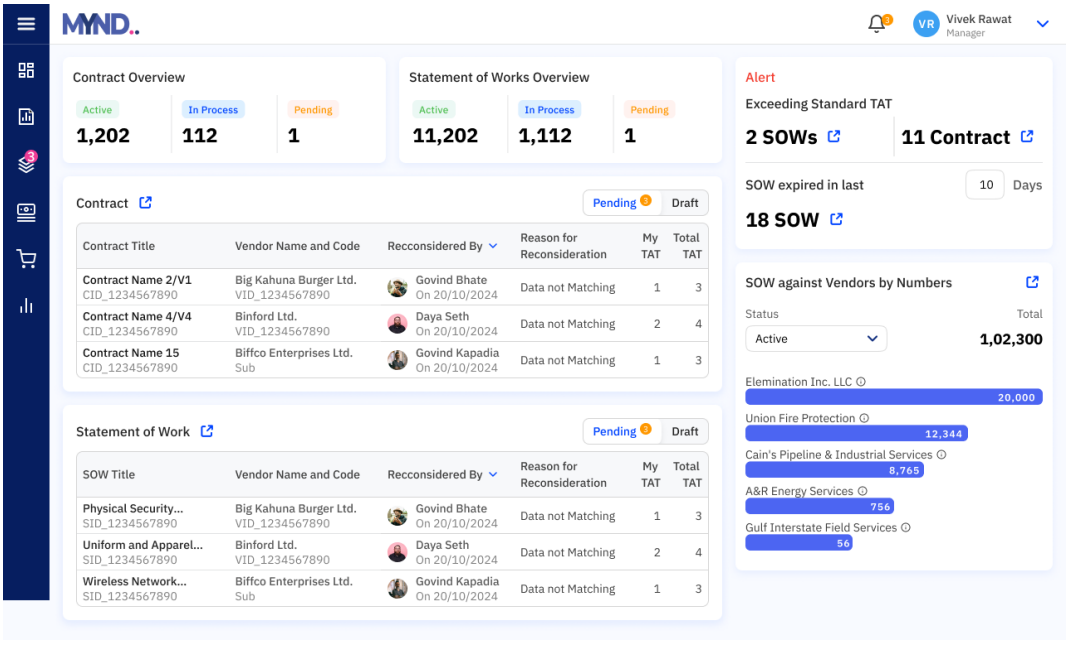


Figure 62: Dashoard Contract approver

5.6.3 PO Creator Dashboard

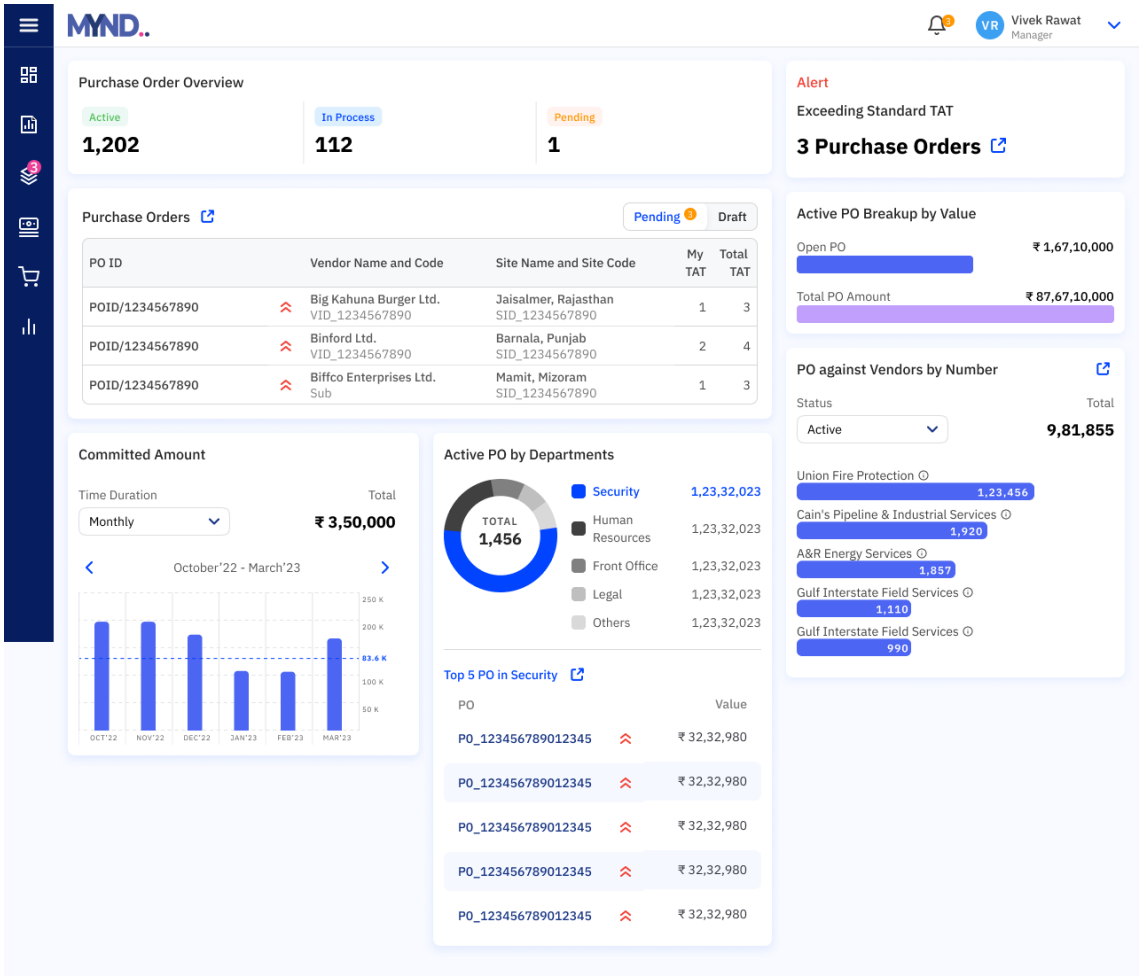


Figure 63: Dashboard PO Creator

5.6.4 PO Approver Dashboard

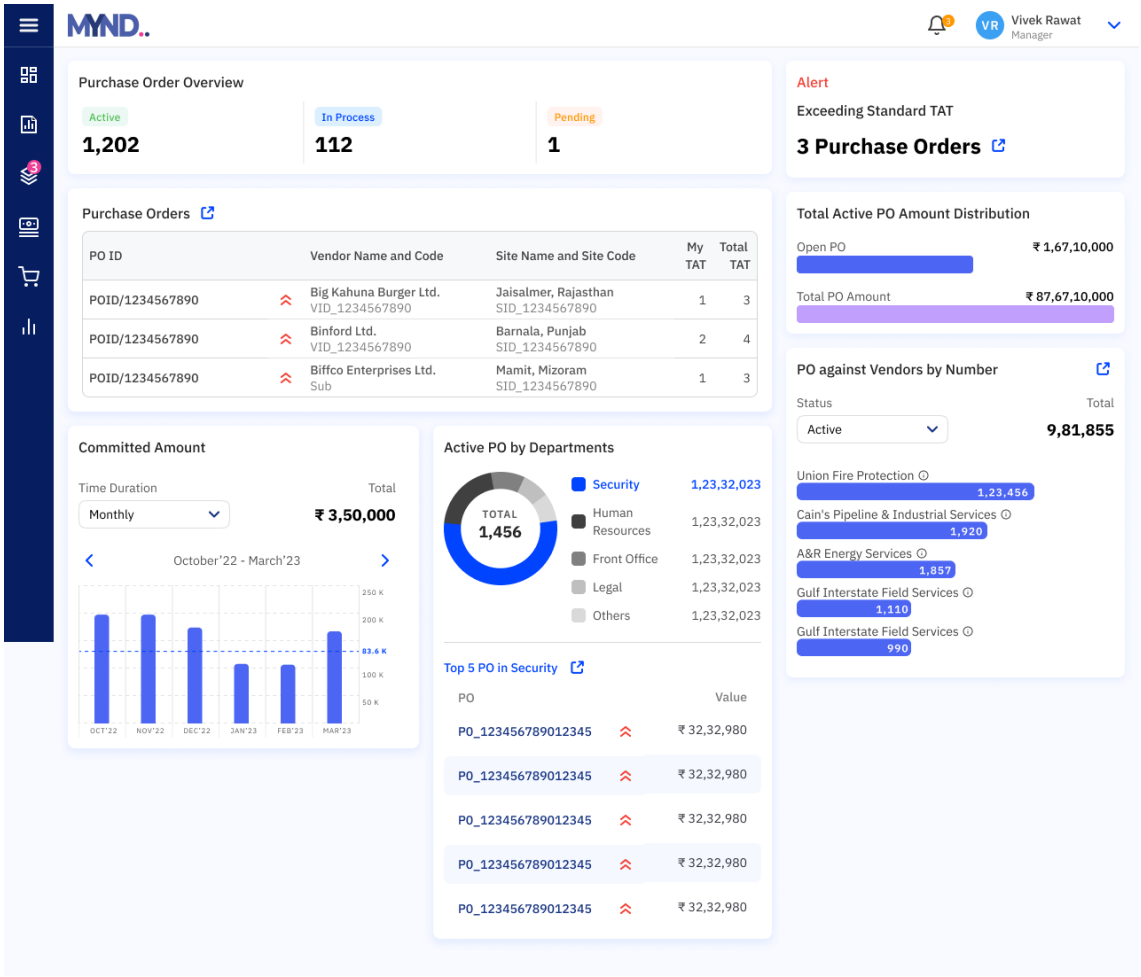


Figure 64: PO Approver Dashboard

5.6.5 Vendor Dashboard

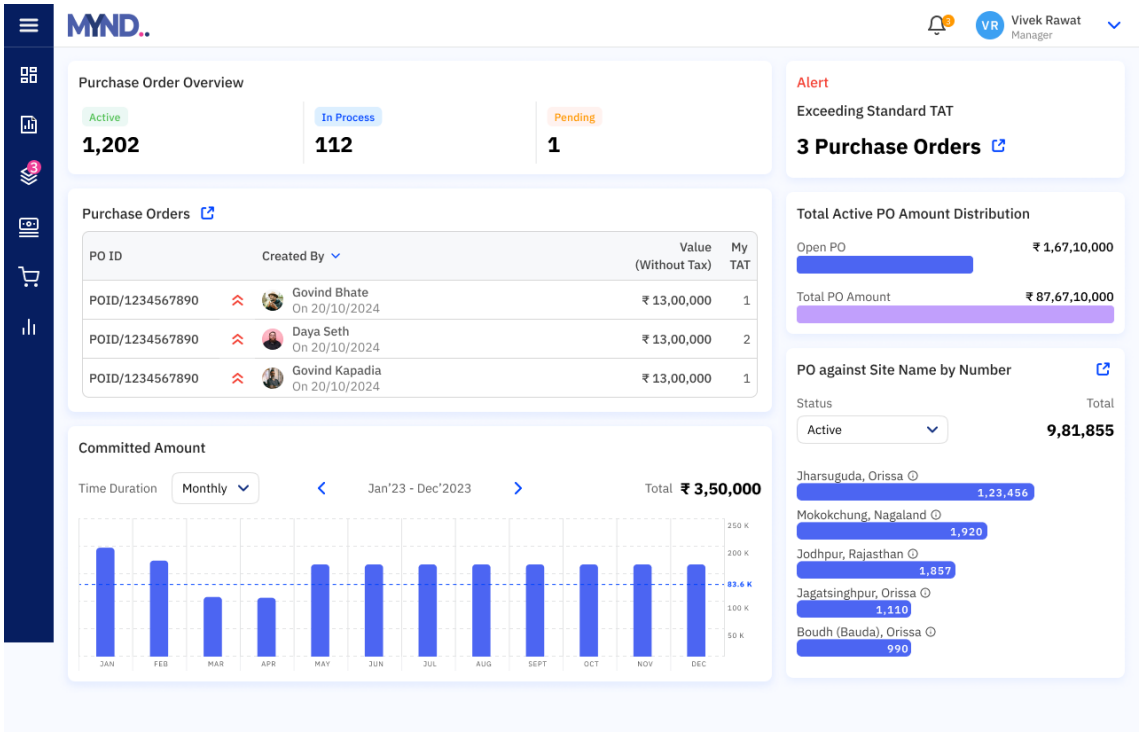


Figure 65: Vendor Dashboard

Chapter 6

CONCLUSIONS AND FUURE SCOPE

6.1 Conclusion

In conclusion, the contract to purchase order management software product design and UI design is a step towards improving business efficiency and customer satisfaction. It helps in businesses can streamline their order management process, reduce errors, and provide a seamless experience to their customers.

Entering into the B2B domain was a challenging experience for me. The complexities of contracts, statements of work (SOWs), and purchase order (POs) were overwhelming at first, but with the right guidance and knowledge, navigation through them was effective.

It was exciting to understand the dependencies and intricacies of these documents to ensure the success of any business deal.

Contracts, SOWs, and POs are all interdependent and have a significant impact on each other. A contract is a legally binding agreement between two or more parties, outlining the terms and conditions of the business deal. SOWs provide specific details on the scope of work to be done, while POs are issued to confirm the purchase of goods or services from a vendor.

Designing the user interface (UI) for order management software in the B2B domain was equally challenging. The UI must accommodate a vast amount of information on a single screen without appearing cluttered. The UI should be designed in a way that allows users to quickly and efficiently navigate through the system to manage orders and track shipments.

6.2 Future Scopes

For now this software works in integration of other SAP softwares, which help in inventory management, vendor on boarding, billing etc.
In future these domains can be integrated with Contract to Purchase Order to make it one massive software which can be used without any alliances.

References

1. Aston, B. (2020, July 27). Write a statement of work the easy way (+ template). ***The Digital Project Manager***.
2. Baston, V. (2014, March 31). Contents of a thorough marketing statement of work. ***Strategic Sourceror***.
3. Benarroche, A. (2020, March 3). Scope of work: clearly defining the construction project. ***Levelset***.
4. Bridges, J. (2019, November 12). How to write a scope of work (example included). ***ProjectManager.com***.
5. https://vakilsearch.com/master-service-agreement
6. https://www.upcounsel.com/master-service-agreement#what-is-the-difference-between-a-contract-an-agreement-and-a-master-service-agreement
7. https://www.impactplus.com/blog/conditions-to-expect-in-a-master-services-agreement-with-a-marketing-agency
8. https://enterslice.com/learning/an-in-depth-analysis-of-the-master-service-agreement/
9. https://www.evisort.com/blog/how-to-write-msa-contracts-master-service-agreements-documents