

Pharmaceutical Document Approval System

A Product Management Case Study by Linda Pan



Problem Statement

Our client, a global pharmaceutical company, faced challenges with ***delays, confusions, and security risks*** in their paper-based document approval process and needed a ***digital solution*** for ***faster, more reliable workflow.***

Context

Overview

Developed a Power Apps platform to streamline document approval workflows, **decreasing processing time by 25%**.

Time

2023.6 – 2023.8
(12 Weeks)

Team

Product Manager x 2
Software Engineer x 4

My Role

Product Management & Design

Application overview

User.Name -- Hello!

Back New application Refresh

Application type: All

Application code: XXX20230606001 Related application: XXX20230606002
Applicant: User.Name Approver: xxxx
Department: IT Status: Approval in progress
Application document: test1.pdf Supporting documents: test2.pdf test3.pdf test4.pdf

Create an application

Back Submit

Application Information

Application code: XXX20230606001 Applicant: User.Name
Department: IT Related application: XXX20230606002
*Purpose of the application (please specify):

Document Information

Application document: Please upload a document +Add document
*Document type: Regular document *Document sub-type: xxxx
*Document name: xxxx Number of approvals: 1
*Document description:

Approval Information

Pre-approvers: xxx, xxx, xxx *Approver: xxxx
Pre-approvers from other departments: xxxx, xxxx
If other department heads have already pre-approved the document, please upload supporting documents

Approval list

Back Export History Refresh

Application code: XXX20230606001 Related application: XXX20230606002
Applicant: User.Name Approver: xxxx
Department: IT Status: Approval in progress
Application document: test1.pdf Supporting documents: test2.pdf test3.pdf test4.pdf

Approval detail

Back

Comments

Application Detail

Application code: XXX20230606001 Applicant: User.Name
Related applications: XXX20230606002
*Application code: XXX20230606002 Application code: XXX20230606003
Applicant: User.Name Document name: test4.pdf
Related applications: XXX20230606003 Document name: test5.pdf

Document Information

Document type: regular document Document sub-type: xxxx
Number of approvals: 1 Supporting documents:

Document name: test2.pdf x Document name: test3.pdf x
Document name: test4.pdf Document name: test5.pdf

Approval information

Pre-approvers: xxxx, xxxx, xxxx
Pre-approvers from other departments: xxxx, xxxx
If other department heads have already pre-approved the document, please upload supporting documents

Document search

Back Refresh

Keyword:

Application code: XXX20230606001 Related application: XXX20230606002
Applicant: User.Name Approver: xxxx
Department: IT Status: Approval in progress
Application document: test1.pdf Supporting documents: test2.pdf test3.pdf test4.pdf

Upload supporting documents

Please upload a document +Add document

Project Timeline

Within my scope of work

Outside my scope of work



Task	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12
Stakeholder Interviews	<div style="width: 100%; background-color: #e63366; height: 10px;"></div>											
Insight Synthesis		<div style="width: 100%; background-color: #e63366; height: 10px;"></div>										
User Requirement Analysis			<div style="width: 100%; background-color: #e63366; height: 10px;"></div>		★	User Requirement Specifications (URS)						
Digital Workflow Design				<div style="width: 100%; background-color: #e63366; height: 10px;"></div>		★	Workflow Diagram					
Functional Design					<div style="width: 100%; background-color: #e63366; height: 10px;"></div>		★	Functional Design Specifications (FDS)				
UX Prototyping						<div style="width: 100%; background-color: #e63366; height: 10px;"></div>		★	Final Design			
Software Development						<div style="width: 100%; background-color: #00aaff; height: 10px;"></div>						
Training & Product Launch								<div style="width: 100%; background-color: #00aaff; height: 10px;"></div>				

Part 1: Understand

Getting to know our users and uncovering their needs



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Challenges

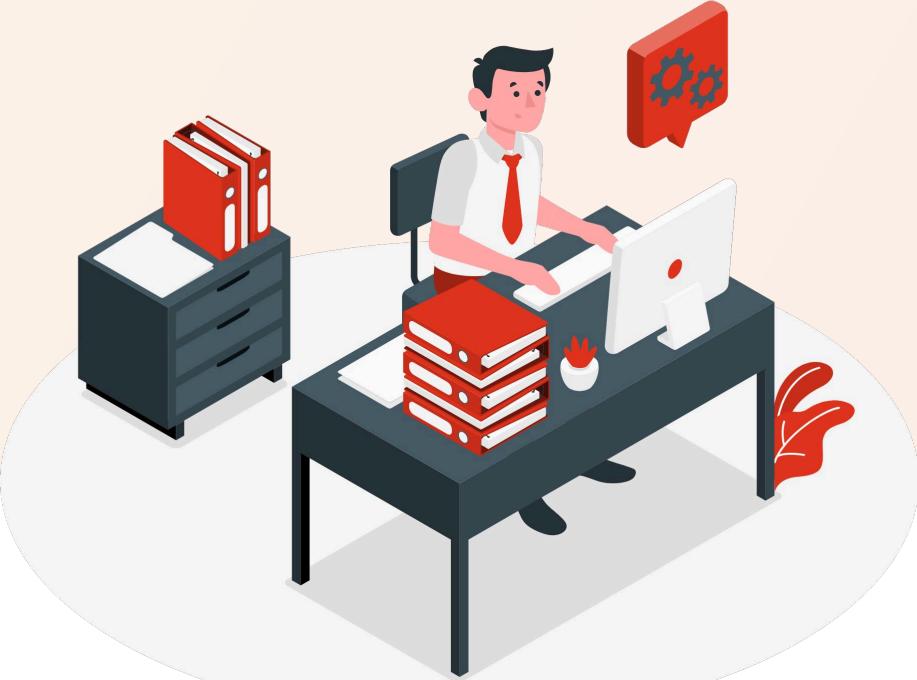
- Understanding **organizational structure** and **role of different users** in the document approval process



My Approach

- Develop **user profiles** for different types of users and their needs

User Profiles

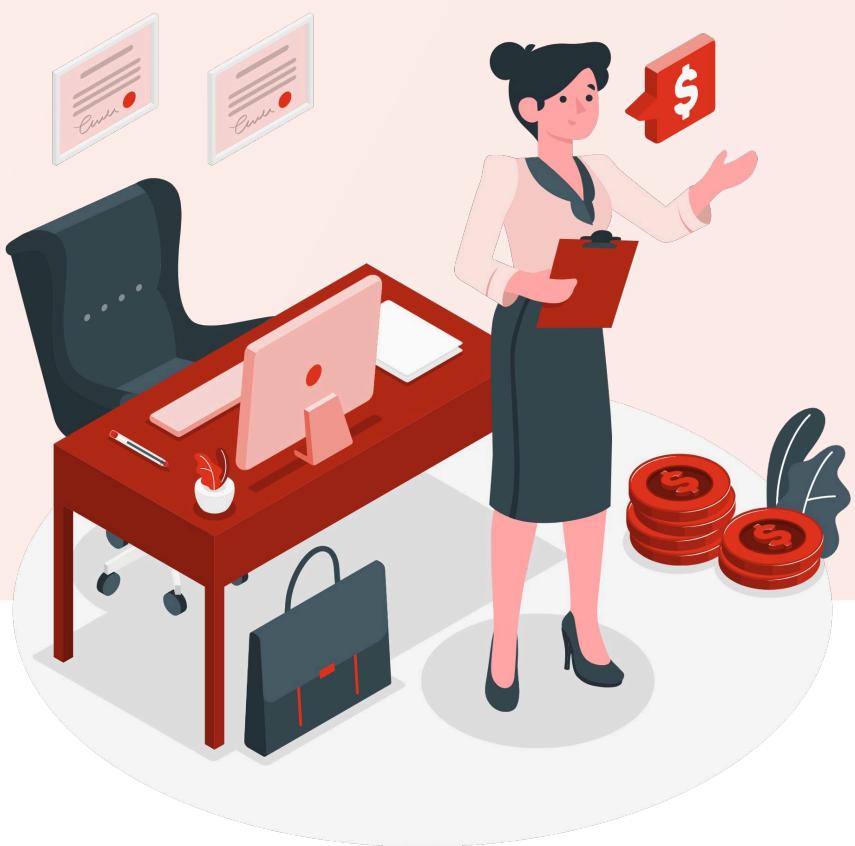


Applicant

Regular office worker in a pharmaceutical firm, seeking document approval.

Core Needs

- Clear instructions
- Track approval status
- Receive approver feedback

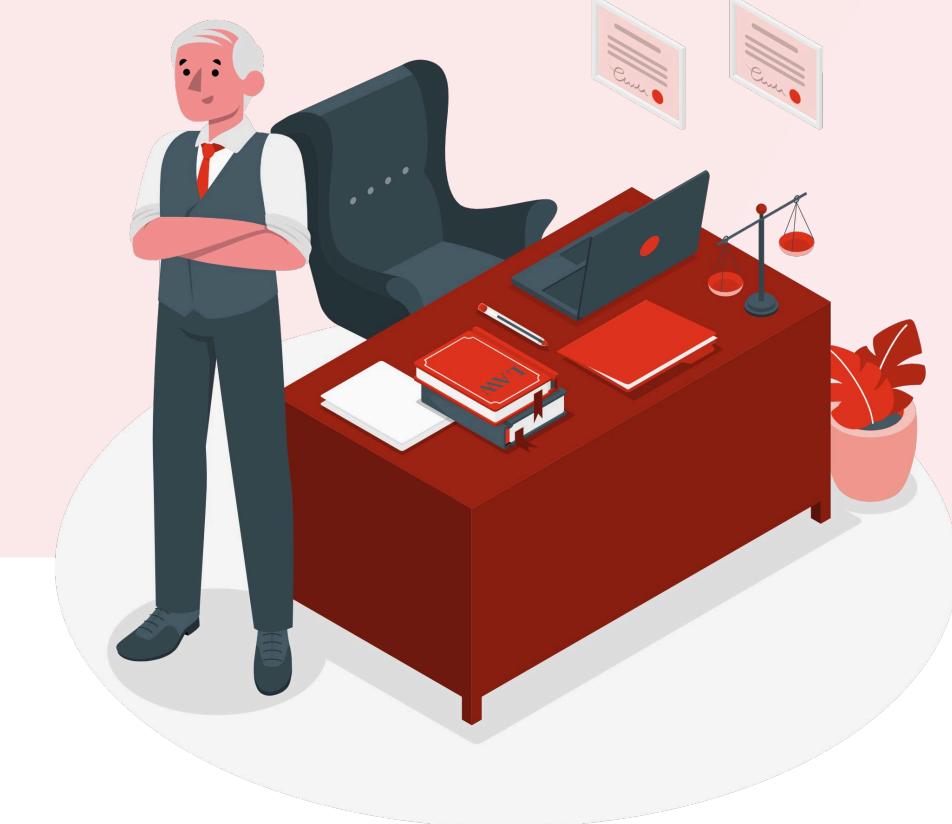


Pre-Approver / Approver

Typically a department head responsible for reviewing certain documents.

Core Needs

- Access to certain application forms and documents
- Effective communication



Legal Head

The company's legal head, the final reviewer who signs off the approved documents.

Core Needs

- Access to fully approved documents in print format
- Audit application trail

Part 2: Define

Understanding core issues and optimizing the existing workflow



Challenges

- Discovering **pain points and opportunities** in the existing process
- Managing **scattered, unstructured user requirements** gathered through interviews
- Envisioning a **new digital workflow**

My Approach

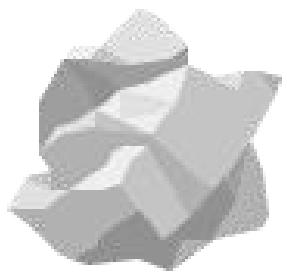
- Define pain points and opportunities through **user journey map**
- Organize requirements into a **structured specification document**
- Visualize the ideal workflow with **swimlane diagram**

Current User Journey

Stage	Fill out form	Attach the document	Pre-approvals	Final approval	Forward to legal head	Review and sign
User Action	Applicant fills out a paper application form.	Applicant attaches the required document to the form.	Applicant meets with managers to collect pre-approvals, additional documents may be required.	Applicant meets the final department head to obtain their approval.	Approver forwards the approved document to the legal head.	Legal head reviews the document and signs it into effect.
Emotion						
Pain Points	<ul style="list-style-type: none">Forms may be unclear or complexExcess resource usage from printingManual errors are possible	<ul style="list-style-type: none">Risk of document loss or mishandlingExcess resource usage from printingNo digital backup	<ul style="list-style-type: none">Confusion over who needs to approve nextHard to monitor progressDelays in execution	<ul style="list-style-type: none">Hard to monitor progressConfusion in execution (if earlier approvals are incomplete)	<ul style="list-style-type: none">Lack of visibility on document statusRisk of document loss or mishandling	<ul style="list-style-type: none">Lack of visibility on document statusPossible need to review application history
Opportunities	<ul style="list-style-type: none">Digital form with clear instructions and validation to prevent errors	<ul style="list-style-type: none">Enable document uploadsCentralized storage for easy access and backups	<ul style="list-style-type: none">Auto-generate pre-approver listReal-time progress tracking and email notifications	<ul style="list-style-type: none">Real-time progress tracking and email notificationsAutomated workflow to prevent repetitions	<ul style="list-style-type: none">Allow applicant to handle the document transfer to legal head.	<ul style="list-style-type: none">Enable export of applicant's application history

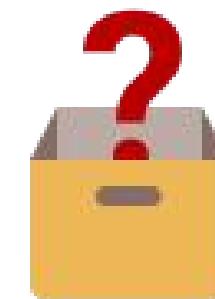
Key Insights Summary

Pain Points



Excessive Resource Usage

Paper forms and duplication waste time and materials



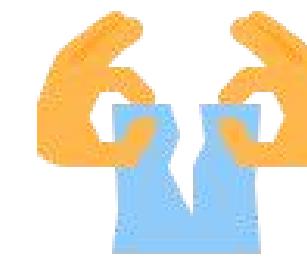
Confusion & Delays

Manual coordination of in-person meetings across departments



Monitoring Challenges

Lack of visibility hinders tracking of application progress



Document Security Risks

Paper-based process increases the risk of document mishandling

Opportunities for Improvement

- **Digitize forms and documents** to reduce resource usage and errors
- **Automate approval workflows** increase efficiency and reduce uncertainty
- **Implement approval tracking mechanisms** for real-time visibility and progress history
- **Streamline communication** between applicants and approvers

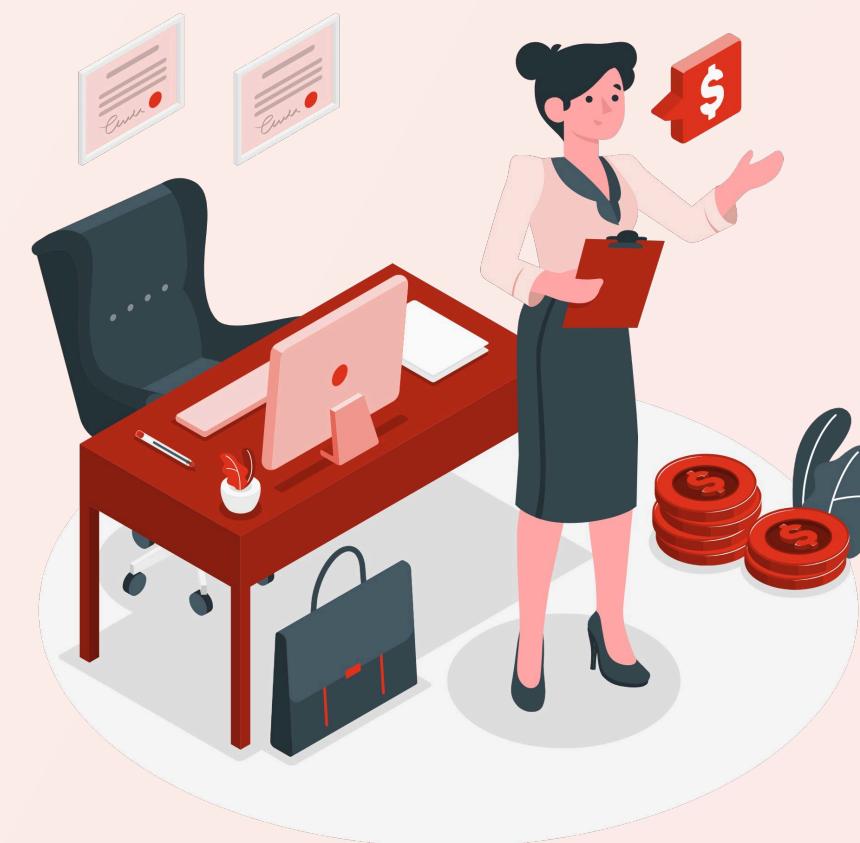
User Requirement Specifications



Applicant

URS-001 Creating an application

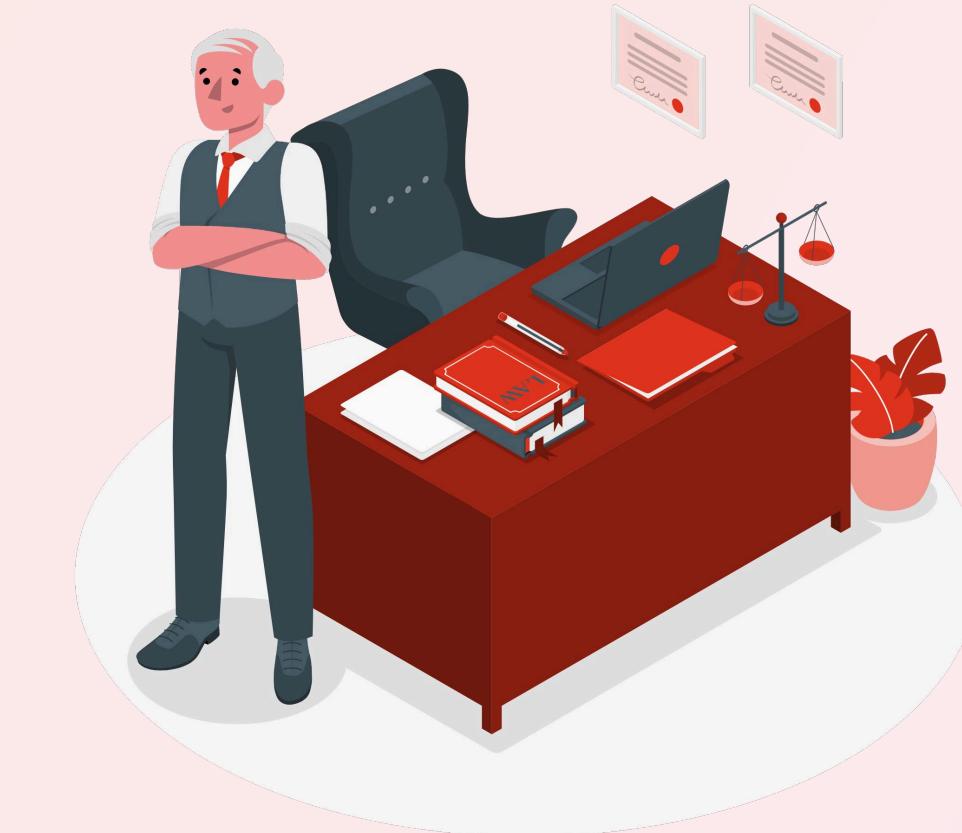
The applicant will need to fill out an online application to initiate the approval workflow...



Pre-Approver / Approver

URS-007 Approving application

The pre-approver/approver should be able to view the documents in the application...



Legal Head

URS-002 Uploading document

With each application, the applicant can upload one document to be approved...

URS-009 Application revisions

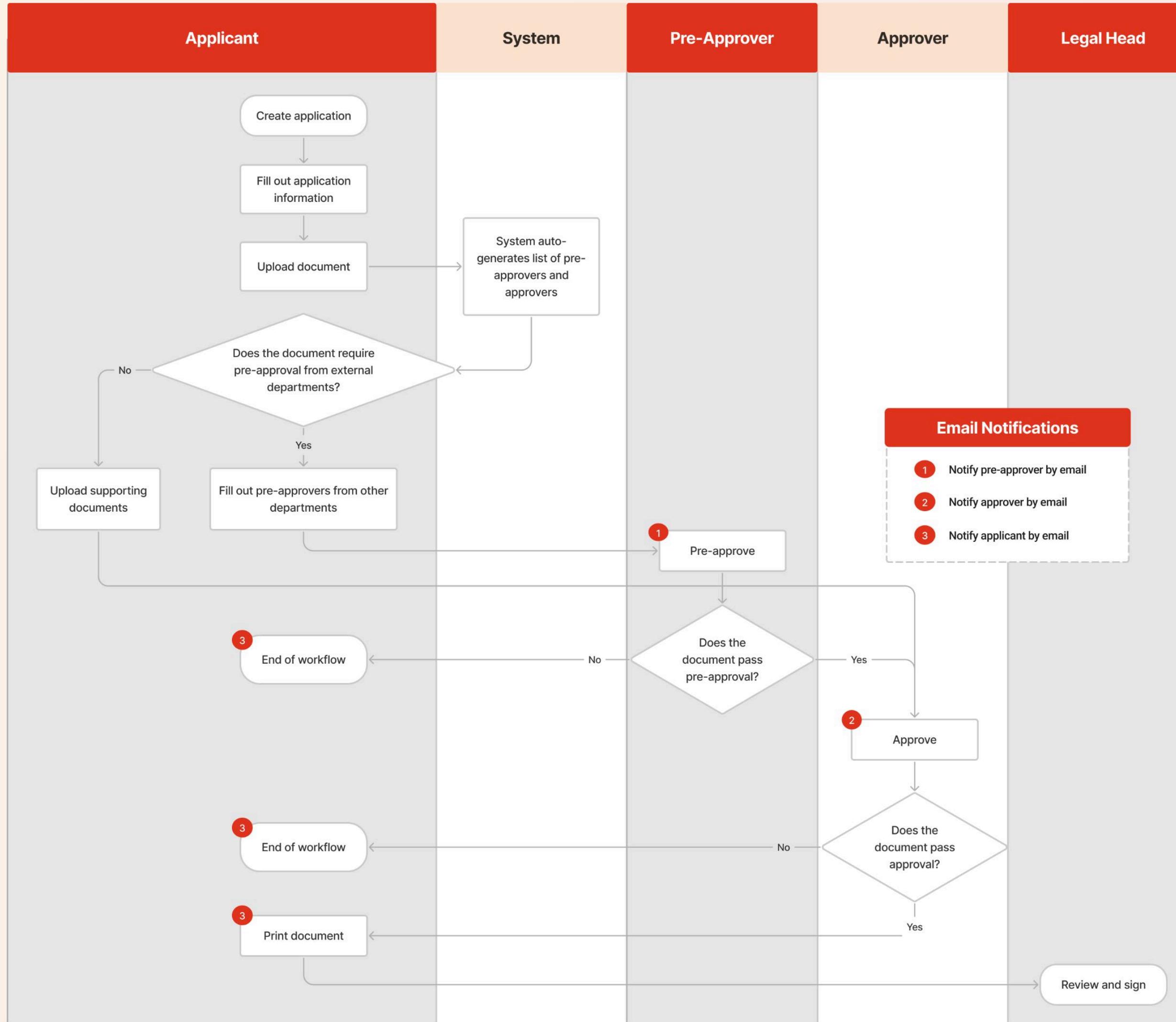
If documents are missing, the pre-approver/approver can return the application for revisions...

URS-014 Export application history

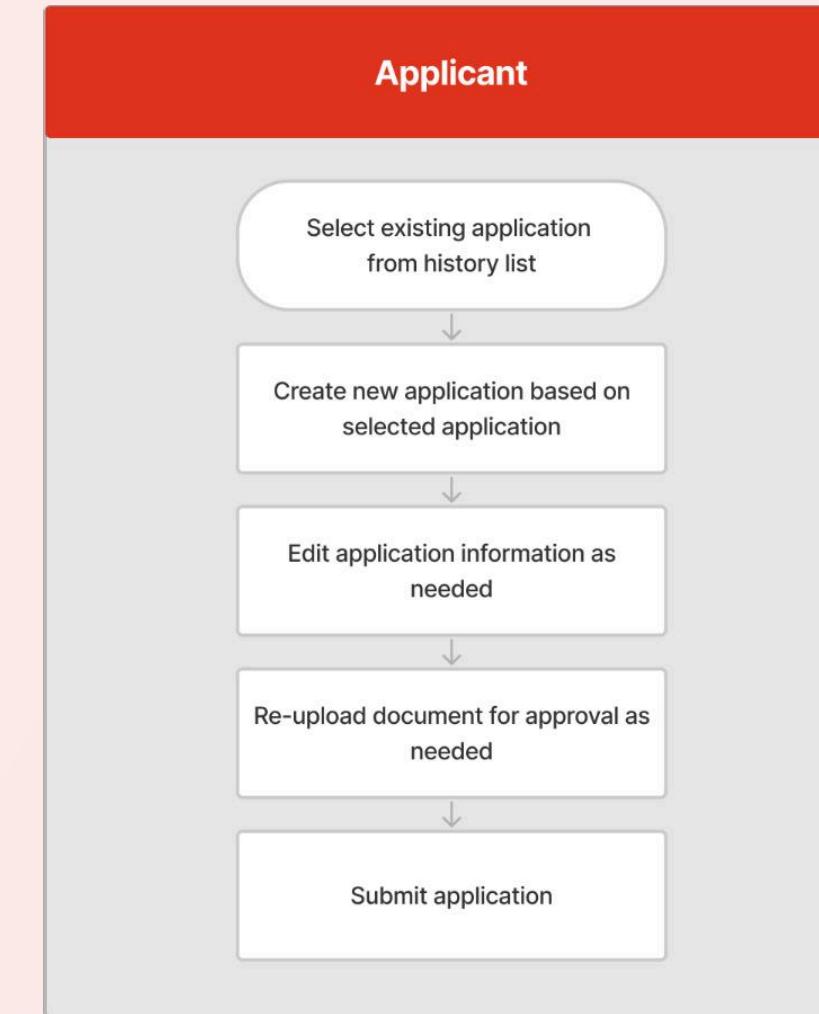
Users should be able to export their application history for the past 1 year in Excel format...

Digital Workflow Design

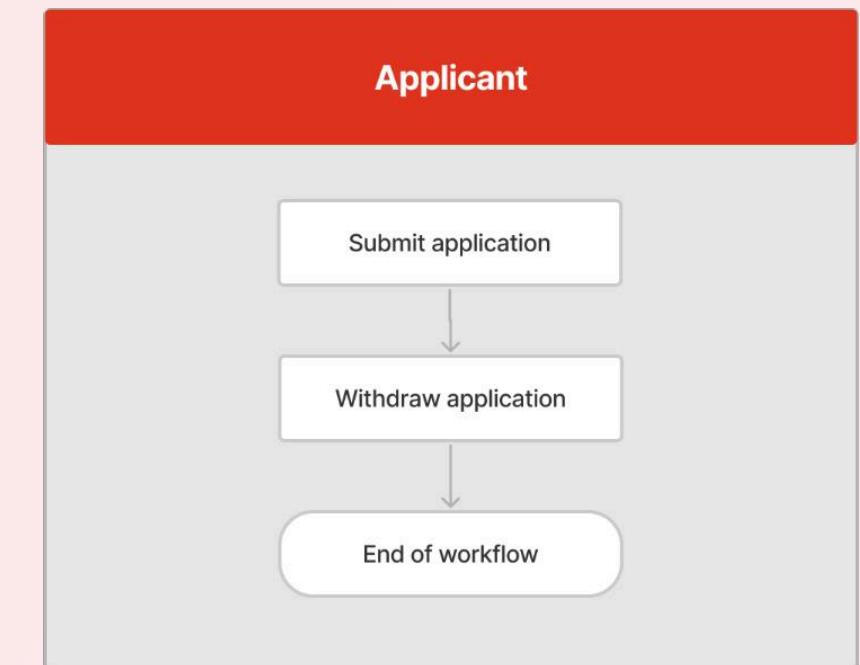
Submit application and acquire approval



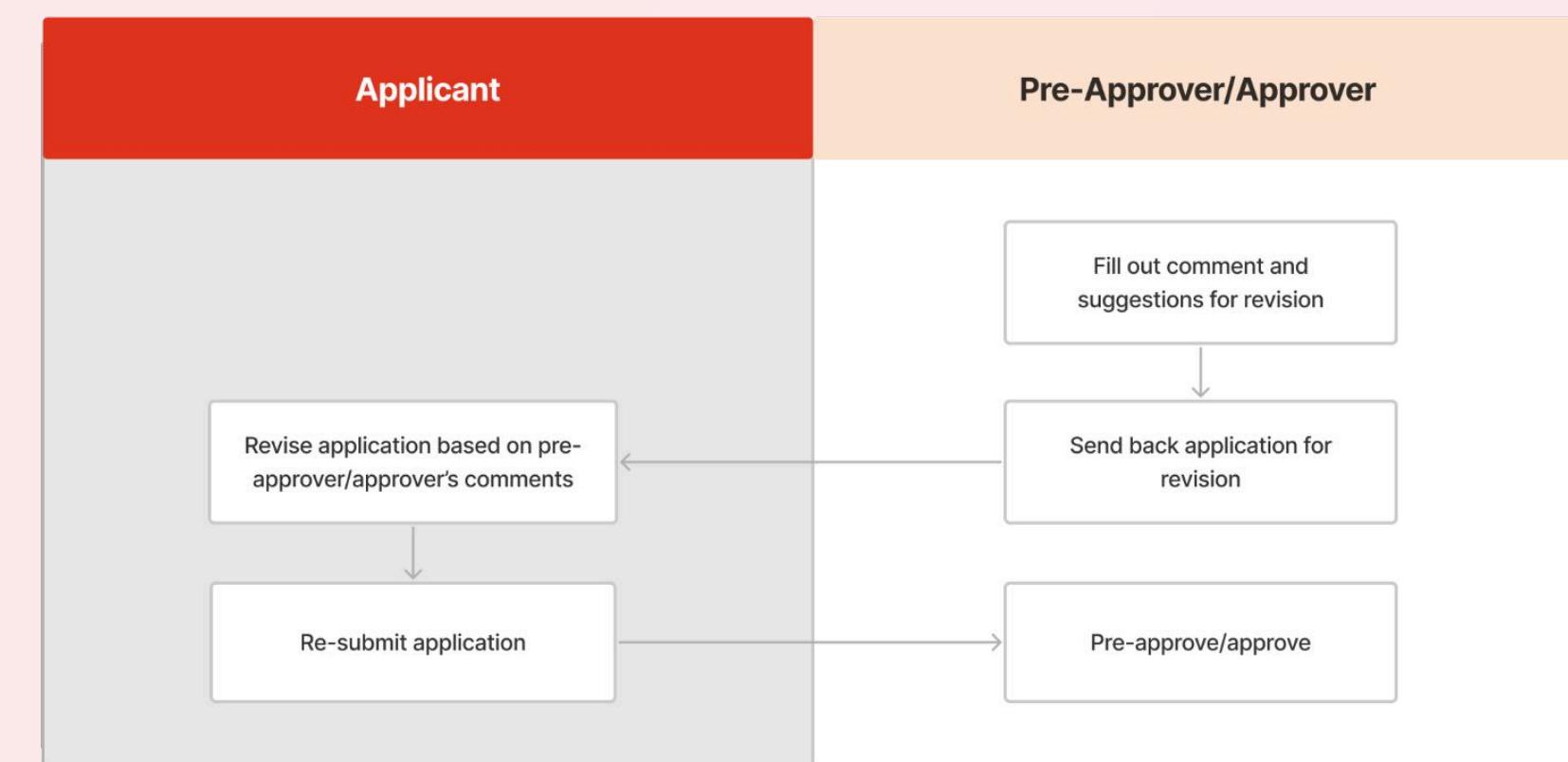
Reuse existing applications



Withdraw applications



Revise applications



Phase 3: Design

Defining system functions and finalizing product design



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Challenges

- Translating user requirements into **clearly defined functions**
- Aligning design vision with **technical feasibility**



My Approach

- Created detailed, accurate **Functional Design Specifications**
- **Collaborate with product managers and developers** to balance user needs and technical constraints in the final design

Functional Design Specifications

From “what users need to do” to “how the system actually behaves”

URS-001 Creating an application

The applicant will need to fill out an online application to initiate the approval workflow...

FDS-001 Creating an application

After clicking the "Create Application" icon on the home page, the user will enter the application overview page and click the "New Application" button to start a new application. On this page, information marked by an asterisk (*) must be filled in, while other information is optional. Once complete, the user should click the "Submit" button to submit the application.

URS-002 Uploading document

With each application, the applicant can upload one document to be approved...

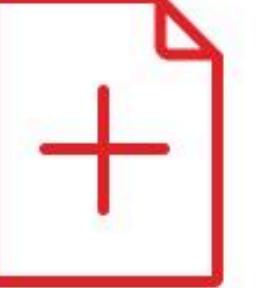
FDS-002 Uploading document

The user can click the "Add Document" link under "Application Document" and upload the application document from their computer. If the user needs to upload supporting documents, they may click the "Upload Supporting Document" link under "Pre-approvers From Other Departments," add an attachment in the pop-up window, fill in a document description, and click the "Save" button. One application document and multiple supporting documents can be uploaded for each application.

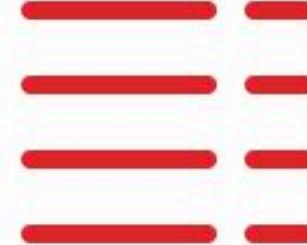
Final Design: Home Page

Document approval system

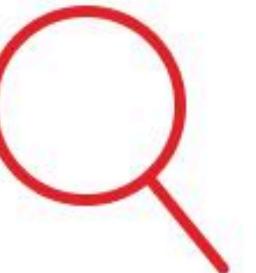
User.Name -- Hello!



Create Application



Application History



Document Search



Approval

Complete application form and upload document online

Create an application

[Back](#) [Submit](#)

Application Information

Application code: XXX20230606001 Applicant: User.Name

Department: IT Related application: XXX20230606002 X

*Purpose of the application (please specify)

Document Information

*Application document: Please upload a document [+ Add document](#)

*Document type: Regular document *Document sub-type: sub-type

*Document name: test Number of approvals: 1

*Document description

Approval Information

Pre-approvers: Approver.Name, Approver.Name, Approver.Name *Approver: Approver.Name X

Pre-approvers from other departments: Approver.Name X | Approver.Name X

If other department heads have already pre-approved the document, please [upload supporting documents](#)

Complete application form and upload document online

Create an application

Back Submit

Application Information

Application code: XXX20230606001 Applicant:  User.Name

Department: IT Related application: XXX20230606002 X

*Purpose of the application (please specify)

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*Application document
Please upload a document [+ Add document](#)

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Pre-approvers from other departments: Approver.Name X | Approver.Name X

If other department heads have already pre-approved the document, please [upload supporting documents](#)

Basic information about the applicant is pre-filled

Complete application form and upload document online

Create an application

Back Submit

Application Information

Application code	XXX20230606001	Applicant	User.Name
Department	IT	Related application	<input type="text" value="XXX20230606002"/> X

*Purpose of the application (please specify)

Document Information

*Application document
Please upload a document
[+ Add document](#)

*Document type *Document sub-type

*Document name Number of approvals

*Document description

Approval Information

Pre-approvers *Approver X

Pre-approvers from other departments

If other department heads have already pre-approved the document, please [upload supporting documents](#)

User names of approvers and pre-
approvers is auto-generated

Complete application form and upload document online

Create an application

Back Submit

Application Information

Application code	XXX20230606001	Applicant	User.Name
Department	IT	Related application	XXX20230606002 X

*Purpose of the application (please specify)

Document Information

*Application document

Please upload a document
+ Add document

*Document type Regular document *Document sub-type sub-type

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*Document description

Approval Information

Pre-approvers Approver.Name, Approver.Name, Approver.Name *Approver Approver.Name X

Pre-approvers from other departments Approver.Name X Approver.Name X

If other department heads have already pre-approved the document, please [upload supporting documents](#)

Users can upload supporting documents to skip pre-approval

Manage application history and reuse existing applications

Application history

Back Export history Refresh

Application code	Applicant
XXX20230606001	User.Name
XXX20230606002	Approver.Name

Department: All Date: All

Status: All

Application code: XXX20230606001 **Related application:** XXX20230606002
Applicant: User.Name **Approver:** Approver.Name
Department: IT **Status:** Approval in progress
Application document: [test1.pdf](#) **Supporting documents:** [test2.pdf](#) [test3.pdf](#) [test4.pdf](#)

[View detail](#) [Create a Copy](#)

Manage application history and reuse existing applications

Application history

Back

Application code:

Department: All

Status: All

Applicant:

Date:

Export history **Refresh**

Application code: XXX20230606001	Related application: XXX20230606002	View detail
Applicant: User.Name	Approver: Approver.Name	Create a Copy
Department: IT	Status: Approval in progress	
Application document: test1.pdf	Supporting documents: test2.pdf test3.pdf test4.pdf	

Exports application history in Excel format

Manage application history and reuse existing applications

Application history

Back Export history Refresh

Application code	<input type="text"/>	Applicant	<input type="text"/>
Department	<input type="text"/> All	Date	<input type="text"/>
Status	<input type="text"/> All		

Application code: XXX20230606001 **Related application:** XXX20230606002

Applicant: User.Name **Approver:** Approver.Name

Department: IT **Status:** Approval in progress

Application document: [test1.pdf](#) **Supporting documents:** [test2.pdf](#) [test3.pdf](#) [test4.pdf](#)

View detail **Create a Copy**

Search and filter tools to find an application

Manage application history and reuse existing applications

Application history

Back Export history Refresh

Application code	<input type="text"/>	Applicant	<input type="text"/>
Department	<input type="text"/> All	Date	<input type="text"/>
Status	<input type="text"/> All		

Application code: XXX20230606001 **Related application:** XXX20230606002

Applicant: User.Name **Approver:** Approver.Name

Department: IT **Status:** Approval in progress

Application document: [test1.pdf](#) **Supporting documents:** [test2.pdf](#) [test3.pdf](#) [test4.pdf](#)

[View detail](#) [Create a Copy](#)

Reuses existing application to start a new one

Manage application history and reuse existing applications

Application history

Back Export history Refresh

Application code	<input type="text"/>	Applicant	<input type="text"/>
Department	<input type="text"/> All	Date	<input type="text"/>
Status	<input type="text"/> All		

Application code: XXX20230606001 **Related application:** XXX20230606002
Applicant: User.Name **Approver:** Approver.Name
Department: IT **Status:** Approval in progress
Application document: [test1.pdf](#) **Supporting documents:** [test2.pdf](#) [test3.pdf](#) [test4.pdf](#)

[View detail](#) [Create a Copy](#)

Opens the application form in a separate page

Review and manage existing application form

Application detail

[Back](#) [Revise](#) [Withdraw](#)

Application Detail

Application Information

Application code: XXX20230606001 **Purpose:** Description of purpose.....
Applicant: User.Name **Department:** IT

Related applications:

Application code	Application document	Status
XXX20230606002	test4.pdf	Approval in progress
XXX20230606003	test5.pdf	Approval in progress

Document Information

Document type: regular document **Document description:** Description of document.....
Document sub-type: sub-type **Document name:** test
Number of approvals: 1 **Application document:** [test1.pdf](#)

Supporting documents:

Document name	Document description
test2.pdf	Description of document.....
test3.pdf	Description of document.....

Approval Information

Pre-approvers: Approver.Name, Approver.Name **Approver:** Approver.Name
Pre-approvers from other departments: Approver.Name, Approver.Name

Review and manage existing application form

Application detail

[Back](#) [Revise](#) [Withdraw](#)

Application Detail

Application Information

Application code: XXX20230606001 **Purpose:** Description of purpose.....
Applicant: User.Name **Department:** IT

Related applications:

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XXX20230606003	test5.pdf	Approval in progress

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Number of approvals: 1 **Application document:** [test1.pdf](#)

Supporting documents:

Document name	Document description
test2.pdf	Description of document.....
test3.pdf	Description of document.....

Approval Information

Pre-approvers: Approver.Name, Approver.Name **Approver:** Approver.Name
Pre-approvers from other departments: Approver.Name, Approver.Name

Options to revise or withdraw applications

Search for a document from application history

Document search

Back Refresh

Keyword

 test1.pdf 11.4 MB view download	Application code: XXX20230606001 Applicant: User.Name Department: IT	Related application: XXX20230606002 Approver: Approver.Name Status: Approval in progress
---	---	---

Search for a document from application history

Document search

Back Refresh

Keyword



 test1.pdf 11.4 MB view download	Application code: XXX20230606001 Applicant: User.Name Department: IT	Related application: XXX20230606002 Approver: Approver.Name Status: Approval in progress
---	---	---

Find a document within an application through keyword search

Make approval decisions and provide feedback

Approval detail

[Back](#) [Pass](#) [Request Revision](#) [Fail](#)

Comments

Application Detail

Application Information

Application code: XXX20230606001 **Purpose:** Description of purpose.....

Applicant: User.Name **Department:** IT

Related applications:

Application code	Application document	Status
XXX20230606002	test4.pdf	Approval in progress
XXX20230606003	test5.pdf	Approval in progress

Document Information

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Number of approvals: 1 **Application document:** [test1.pdf](#)

Supporting documents:

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test2.pdf	Description of document.....
test3.pdf	Description of document.....

Approval Information

Pre-approvers: Approver.Name, Approver.Name **Approver:** Approver.Name

Pre-approvers from other departments: Approver.Name, Approver.Name

Final Design

[Create an Application](#)[Manage Application History](#)[Search for a Document](#)[Application Approval](#)

Make approval decisions and provide feedback

Approval detail

Back

Pass Request Revision Fail

Comments

Application Detail

Application Information

Application code: XXX20230606001

Purpose: Description of purpose.....

Applicant: User.Name

Department: IT

Related applications:

Application code	Application document	Status
XXX20230606002	test4.pdf	Approval in progress
XXX20230606003	test5.pdf	Approval in progress

Document Information

Document type: regular document

Document sub-type: sub-type

Number of approvals: 1

Supporting documents:

Document name	Document description
test2.pdf	Description of document.....
test3.pdf	Description of document.....

Approval Information

Pre-approvers: Approver.Name, Approver.Name

Approver: Approver.Name

Pre-approvers from other departments: Approver.Name, Approver.Name

Pass or fail the application, or request a revision from the applicant

Make approval decisions and provide feedback

Approval detail

Comments

Back Pass Request Revision Fail

Application Detail

Application Information

Application code: XXX20230606001 Purpose: Description of purpose.....
Applicant: User.Name Department: IT

Related applications:

Application code	Application document	Status
XXX20230606002	test4.pdf	Approval in progress
XXX20230606003	test5.pdf	Approval in progress

Document Information

Document type: regular document Document description: Description of document.....
Document sub-type: sub-type Document name: test
Number of approvals: 1 Application document: [test1.pdf](#)
Supporting documents:

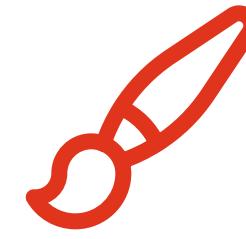
Document name	Document description
test2.pdf	Description of document.....
test3.pdf	Description of document.....

Approval Information

Pre-approvers: Approver.Name, Approver.Name Approver: Approver.Name
Pre-approvers from other departments: Approver.Name, Approver.Name

Provide feedback to the applicant in the comment section

Reflections



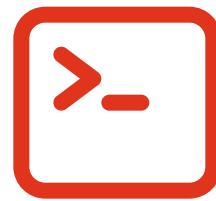
Facilitate Communication Through Visuals

Ensured cross-functional understanding and alignment



Document Each Step in Detail

Provided a resource for future references



Incorporate Technical Feedback

Ensured designs were feasible and practical to implement



Leverage Existing Design Assets

Streamlined the process and reduced the adoption curve

Measuring Success

Key Metric

Successful implementation of the Power Apps platform led to a **25% decrease in average processing time.**

Client Feedback

"It's very clear and reliable, making the whole process a breeze."

"Tracking progress is so much easier now."

"I love that I don't have to print tons of documents anymore."

"It's so much easier to provide feedback to applicants."

Other Evaluations

- User satisfaction rate
- Error rate
- Resource savings
- System downtime
- Scalability
- Usability reports