IDEATION PHASE

Date	2nd November 2025
Team ID	NM2025TMID01898
Project Name	Laptop request catalog item

1. Problem Statement

In most organizations, laptop and hardware allocation requests are handled through manual processes, such as email communication, physical request forms, or informal verbal approvals. These methods lead to significant inefficiencies, including delays, data loss, lack of transparency, and poor tracking of asset distribution.

The absence of a centralized system for managing hardware requests often results in:

- Duplicate or misplaced requests, causing confusion and wasted time.
- Delayed approvals, especially when multiple managerial layers are involved.
- No visibility for the requester to check the status of their laptop request.
- Difficulty in maintaining inventory control, as the IT team struggles to track who has which asset.

In a digitally transforming organization, where timely access to resources is critical, such manual workflows create bottlenecks and reduce productivity.

Current Challenges:

1. Employees or students rely on email chains to request laptops.
2. Managers and IT teams spend unnecessary time approving and assigning assets manually.
3. The lack of notifications or reminders leads to forgotten or delayed responses.
4. There is no historical record for tracking requests or ensuring accountability.
5. IT teams have no real-time insight into available stock or allocated laptops.

Need for Automation:

To address these pain points, there is a clear need for an automated ServiceNow-based Laptop Request Catalog Item, which would allow users to raise requests through a digital portal. The system can automate approval workflows, trigger email notifications, and integrate with the asset management database to check availability before fulfillment.

This solution will not only reduce turnaround time but also ensure data accuracy, transparency, and better inventory control.

2. Empathy Map Canvas

To develop a user-centered solution, it's essential to understand the pain points, emotions, motivations, and needs of different stakeholders involved in the laptop request process.

Below is the empathy map representing key user perspectives:

Primary User – Employee/Student (Requester)

Says:

- "I need a laptop quickly to start my work."
- "I don't know who to contact for approval."
- "It takes too long to get updates about my request."

Thinks:

- "There should be an easier way to request a laptop online."
- "If there was a system that showed my request progress, I'd feel more confident."

Does:

- Sends multiple follow-up emails to HR or IT departments.
- Keeps checking manually with superiors about request status.

Feels:

- Frustrated about the long approval cycle.
- Unsure about when or whether the request will be fulfilled.
- Relieved when someone responds, but anxious about future delays.

IT Asset Management Team

Says:

- “We get requests in all formats — it’s hard to manage.”
- “We don’t know which requests are approved.”
- “Tracking who received what is confusing.”

Thinks:

- “If approvals and stock checks were automated, it’d save us hours.”
- “We should have one system where all requests are visible.”

Does:

- Manually logs laptop allocations in Excel or offline records.
- Confirms approval through email or chat before dispatching assets.

Feels:

- Overwhelmed by the number of requests.

Department Head / Approver

Says:

- “I need to know why the employee needs a new laptop.”
- “Sometimes requests come without justification.”
- “It’s hard to track which requests I’ve approved already.”

Thinks:

- “An approval workflow should automatically reach me.”
- “If I had one dashboard to approve or reject, it’d be much easier.”

Does:

- Approves or rejects requests manually via email.
- Forgets to reply due to busy schedules.

Feels:

- Annoyed by lack of structure in request handling.
- Relieved when processes are automated and transparent.

Insights from the Empathy Map

- All stakeholders face communication gaps and lack of visibility.
- Everyone wants a single system that’s fast, transparent, and easy to use.

- Automation in approvals and notifications will reduce confusion and save time.

3. Brainstorming Ideas

After identifying pain points through empathy mapping, the next step is to brainstorm possible solutions and features to include in the ServiceNow platform. A brainstorming session was conducted focusing on ServiceNow's capabilities, feasibility, and alignment with user needs.

Brainstorming Objectives

1. To find a ServiceNow-based approach to automate the laptop request workflow.
2. To ensure the system is easy to use, scalable, and requires minimal manual intervention.
3. To align the project with the organization's digital transformation goals.

Techniques Used

- Mind Mapping: To connect features such as request form → approval → notification → assignment → closure.
- SCAMPER Method:
  - Substitute: Replace manual approvals with automated workflow.
  - Combine: Integrate catalog item with asset management module.

- Adapt: Use templates from other ServiceNow catalog items.
- Modify: Customize the UI to simplify user input.
- Eliminate: Remove unnecessary manual communication.
- Reverse: Trigger IT team actions automatically after approval.

Generated Ideas

1. Laptop Request Form in Service Catalog
   - Includes fields like Employee Name, ID, Department, Laptop Model, and Purpose.
   - Auto-fills user details from the login session.
2. Automated Approval Flow
   - On submission, request goes to the Department Head for approval.
   - Approved requests are auto-assigned to the IT team.
   - Rejected requests notify the requester with the reason.
3. Integration with Asset Management
   - The system checks available stock of laptops before assignment.
   - Automatically marks laptop as “Allocated” in the asset table once delivered.
4. Email and SMS Notifications
   - Requester gets notified at every stage: submission, approval, assignment, and closure.

5. Performance Dashboard
    - IT team can track request volumes, approvals pending, and asset utilization.
6. Service Level Agreement (SLA) Tracking
    - Defines expected turnaround times for approval and delivery.
7. Knowledge Base Integration
    - Provides FAQs about request eligibility, laptop models, and policies.
    - Reduces repetitive queries to the IT team.

Idea Evaluation and Shortlisting:

Each idea was evaluated based on feasibility, impact, and scalability:

Idea	Feasibility	Impact	Scalability
Laptop Request Form	High	High	High
Automated Approval Flow	High	Very High	High
Asset Management Integration	Medium	Very High	Medium
Notifications	High	High	High
Dashboard	Medium	Medium	High
SLA Tracking	High	Medium	Medium
Knowledge Base	Medium	Medium	High

Based on the evaluation, the top three prioritized ideas were selected for implementation:

1. Laptop Request Form and Approval Workflow
2. Asset Management Integration
3. Automated Notifications

Expected Outcome:

By implementing this solution, the organization can achieve:

- A centralized, transparent process for laptop requests.
- Reduced approval time through automation.
- Improved user satisfaction with self-service access.
- Accurate asset tracking within ServiceNow.

This ideation lays the foundation for the next phases — Planning, Design, and Implementation — ensuring that the final ServiceNow solution aligns perfectly with user needs and institutional efficiency goals.

PROJECT PLANNING PHASE

Date	2nd November 2025
Team ID	NM2025TMID01898
Project Name	Laptop request catalog item

PRODUCT BACKLOG:

ID	Feature / Task	Priority
PB01	Create Laptop Request Form (Employee details, model, purpose)	High
PB02	Design Approval Workflow using Flow Designer	High
PB03	Integrate with Asset Management to check stock	High
PB04	Configure Email Notifications for each stage	Medium
PB05	Set SLAs and performance metrics	Medium
PB06	Conduct Testing and Documentation	High

SPRINT SCHEDULE:

Sprint	Duration	Key Activities
Sprint 1	Week 1	Create catalog form and configure fields.
Sprint 2	Week 2	Build approval workflow and integrate with asset management.
Sprint 3	Week 3	Test system, set up notifications, and finalize documentation.

ESTIMATION TABLE:

Task	Assigned To	Effort (Hours)
Requirement Gathering	Project Lead	4
Catalog Form & UI Design	Developer	8
Workflow Automation	Developer	10
Testing	Tester	6
Documentation	Team	4
Total Estimated Effort	≈ 32 Hours (4–5 Days)	

DELIVERABLES:

- Product backlog and sprint breakdown.
- Estimated effort and resource plan.
- Clear timeline for design, workflow, and testing.

PROJECT DESIGN PHASE

Date	2nd November 2025
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1.Problem–Solution Fit

In most organizations and institutions, requesting laptops or hardware resources still follows manual or semi-digital procedures. Employees or students often send emails or fill out offline forms to request laptops, and these requests must be manually approved and assigned by different departments. This process is time-consuming, error-prone, and lacks transparency.

Identified Problems:

1. No centralized system: Requests are scattered across emails, messages, or spreadsheets.
2. Approval delays: Managers often miss or forget approvals due to a lack of reminders or notifications.
3. Tracking issues: Requesters can't view real-time request status or estimated fulfillment date.
4. Manual data handling: IT teams record and update asset allocations manually, causing mismatches.
5. Lack of accountability: There's no systematic record of who approved or assigned a laptop.
6. No inventory integration: Asset availability is not verified before approval, leading to miscommunication.

Fit Between Problem and Solution:

To solve these challenges, a ServiceNow-based automation provides the ideal foundation. ServiceNow already supports modular workflows, catalog items, and integrations with IT Asset Management, making it a natural fit for the problem.

The project aligns perfectly with ServiceNow's capabilities by:

- Creating custom catalog items for structured data input.
- Using Flow Designer to handle approvals and assignments.
- Integrating with CMDB (Configuration Management Database) for asset tracking.
- Sending automated notifications for transparency.

2. Proposed Solution

The proposed system—Laptop Request Catalog Item—is designed to automate the entire process of requesting, approving, and assigning laptops using ServiceNow. The system is modular, efficient, and user-friendly, allowing employees or students to raise hardware requests seamlessly.

Key Objectives:

- To simplify the request and approval process for hardware allocation.
- To automate approvals and notifications using ServiceNow's Flow Designer.
- To integrate with the IT Asset Management module to track stock and ownership.
- To increase visibility for requesters and administrators through dashboards and status updates.

Core Features:

1. Service Catalog Request Form

- A catalog item called “Laptop Request” is created in ServiceNow.
- Form fields include: Employee Name, ID, Department, Laptop Model, Justification, and Priority.
- User details (Name, Department) auto-populate based on login credentials.

2. Automated Approval Workflow
    - When a request is submitted, it automatically routes to the Department Head for approval.
    - Upon approval, the request moves to the IT Asset Management Team for assignment.
    - Rejection triggers a notification to the requester with the reason.
3. Asset Management Integration
    - The workflow checks the asset table to ensure laptops are available.
    - Once assigned, the asset record is updated to show the new owner.
4. Email and Notification System
    - The requester receives updates at every stage—Submission, Approval, Assignment, and Closure.
    - Approvers and IT staff also receive reminders for pending actions.
5. Service Level Agreements (SLAs)
    - Configured SLAs ensure that requests are processed within defined time limits.

3. Solution Architecture

The architecture of the Laptop Request Catalog Item system is designed to ensure modularity, scalability, and easy integration within ServiceNow's existing IT Service Management framework.

3.1. System Overview:

The solution follows a three-layer architecture:

1. Presentation Layer: Service Portal Interface where users submit requests.
2. Application Layer: Flow Designer workflows and catalog item configurations.
3. Data Layer: Tables storing user, request, and asset information.

3.2. Components and Modules:

Component	Description	ServiceNow Module
Laptop Request Form	Front-end catalog item with user inputs	Service Catalog
Approval Workflow	Automates request routing and decision-making	Flow Designer
Asset Management	Stores laptop stock details and owner mapping	IT Asset Management
Notification Engine	Sends automated email/SMS alerts	Notifications

SLA Definition	Ensures time-bound task completion	Service Level Management
Reporting & Dashboard	Provides performance insights	Performance Analytics

3.3. Data Model:

The system uses ServiceNow's built-in tables along with one custom catalog item.

Primary Tables:

- sc_cat_item – Stores catalog item configuration.
- sc_request – Stores user requests.
- alm_asset – Tracks assets (laptops, peripherals).
- sys_user – Maintains user information.
- task_sla – Monitors SLA compliance.

Data Relationships:

- Each request (sc_request) references a specific catalog item (sc_cat_item).
- Each approved request links to an asset record in alm_asset.
- Notifications are triggered from sys_user relationships.

3.4. Workflow Design:

Step 1: Request Submission

The user logs into the Service Portal and fills in the Laptop Request Form.

Step 2: Approval Routing

The request automatically goes to the Department Head for review.

Step 3: Asset Assignment

If approved, the workflow checks available laptops in the alm_asset table.

If available, one is assigned; if not, the IT team is alerted to procure new stock.

Step 4: Notifications & Closure

Both requester and IT staff receive email confirmations

3.5. Security and Permissions:

- Only authenticated users can raise requests.
- Approval access restricted to department heads.
- IT asset modification rights reserved for the IT team.

3.6. Benefits of the Architecture:

- Scalable: Easily adaptable for other hardware like desktops or accessories.
- Secure: Role-based permissions ensure controlled access.
- Efficient: Uses low-code automation via Flow Designer.

- Maintainable: Built on ServiceNow's native architecture—no external dependencies.

Conclusion:

The designed system provides a complete, automated, and secure platform for managing laptop requests. By leveraging ServiceNow's workflow automation, catalog management, and asset integration, this architecture ensures end-to-end process efficiency, reduced manual work, and improved user satisfaction.

REQUIREMENT ANALYSIS PHASE

Date	2nd November 2025
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1. Data Flow Diagrams and User Stories

The Data Flow Diagram (DFD) helps visualize how information moves through the system — from the user raising a request to the final laptop assignment. The DFD is divided into two levels:

1.1. Level 0 – Context Diagram:

This diagram shows the overall interaction between the system and external entities.

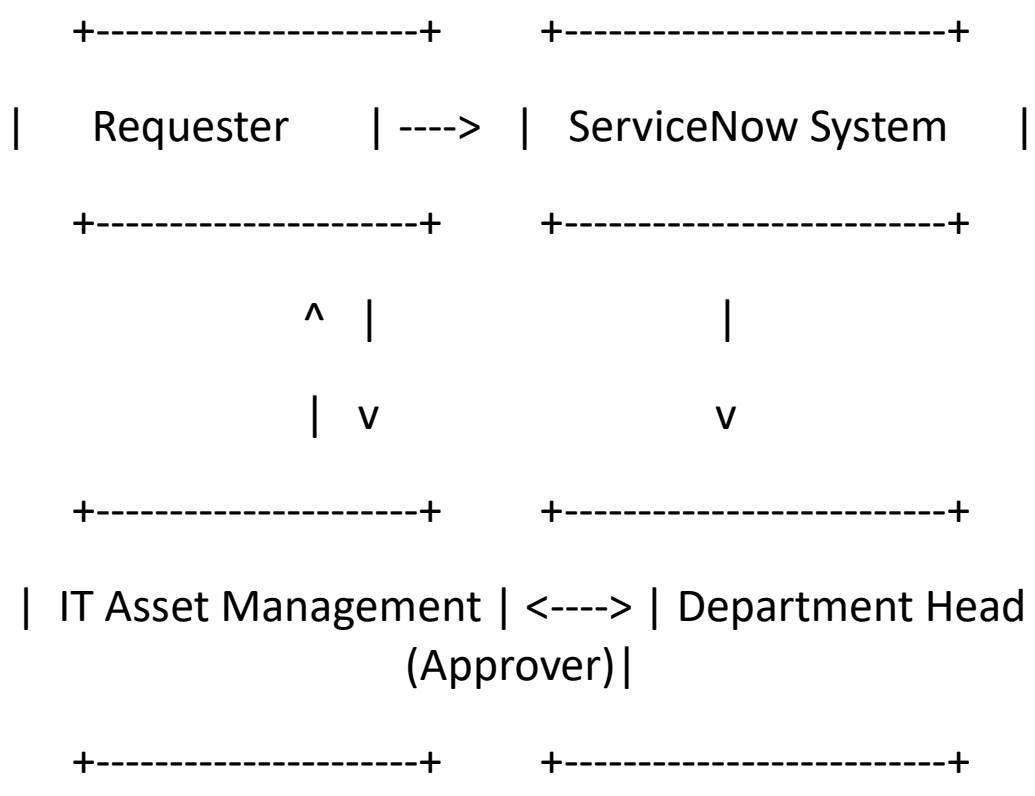
External Entities:

- Requester (Employee/Student)
- Department Head (Approver)
- IT Asset Management Team
- ServiceNow System

Flow Description:

1. The requester submits a laptop request.
2. The Department Head reviews and approves/rejects.
3. Approved requests go to IT Asset Management for fulfillment.
4. Notifications are sent back to the requester at each stage.

Diagram:


+----------+ +----------+
| Requester | ----> | ServiceNow System |
+----------+ +----------+
^ | |
| v v
+----------+ +----------+
| IT Asset Management | <----> | Department Head (Approver)|
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1.2. Level 1 – Detailed Process Flow

This level breaks down the internal process flow of the ServiceNow system.

Main Processes:

1. Submit Request: User enters form details.
2. Approval Processing: Manager receives and acts on the request.
3. Asset Verification: System checks asset stock.
4. Assignment & Update: Asset is allocated to requester.
5. Notifications: Automatic emails sent to all parties.

1.3. User Stories

User stories describe the system's behavior from each user's perspective.

User Role	User Story	Acceptance Criteria
Employee / Student (Requester)	As a user, I want to raise a laptop request online, so I don't have to email IT manually.	The form should auto-fill my details and allow me to select a laptop model.
Department Head (Approver)	As a manager, I want to approve or reject requests with one click, so I can manage approvals easily.	The system should notify me immediately when a request is pending.

I’m IT Asset Management	As an IT staff member, I want to view approved requests and update asset status to “Assigned.”	The asset table should automatically update with the new owner.
Administrator	As an admin, I want to generate reports of requests and assignments.	The dashboard should display daily and monthly request summaries.

2. Solution Requirements

The Solution Requirements outline the expected functionalities (what the system should do) and quality constraints (how it should perform).

2.1. Functional Requirements:

Requirement ID	Description	Priority	Module
FR01	The system shall allow users to request laptops through a catalog item.	High	Service Catalog
FR02	The system shall route the request to the Department Head for approval.	High	Flow Designer
FR03	The system shall integrate with the Asset Management module to verify stock.	High	Asset Management

FR04	The system shall send email notifications for submission, approval, and assignment.	Medium	Notification Engine
FR05	The system shall maintain an SLA for approval and fulfillment times.	Medium	SLA Management
FR06	The system shall allow IT staff to mark requests as “Fulfilled.”	High	Service Desk
FR07	The system shall generate summary reports for administrators.	Medium	Performance Analytics

2.2. Non-Functional Requirements:

Requirement ID	Description	Type
NFR01	The system should load the catalog form within 3 seconds.	Performance
NFR02	All user and asset data must be securely stored with role-based access.	Security
NFR03	The interface should be accessible on both desktop and mobile browsers.	Usability
NFR04	Notifications must trigger within 10 seconds after any workflow update.	Efficiency
NFR05	The system must handle up to 500 concurrent users without lag.	Scalability
NFR06	SLA compliance data must be available for audit within 24 hours.	Reliability

3. Technology Stack (Architecture)

The system leverages ServiceNow's cloud-based ITSM architecture, which provides scalability, automation, and low-code customization.

3.1. Architecture Overview:

The Laptop Request Catalog Item System follows a four-layered architecture:

Layer	Description	Technologies Used
Presentation Layer	The Service Portal interface where users submit requests and view status.	HTML, CSS, ServiceNow UI Builder
Application Layer	Handles workflows, approvals, and notifications.	Flow Designer, Service Catalog
Data Layer	Manages records, requests, and asset information.	ServiceNow Tables (sc_request, alm_asset, sys_user)
Integration Layer	Enables communication between catalog, asset management, and notification systems.	REST APIs, Notification Engine

3.3. Tools and Technologies

Category	Tool / Technology	Purpose
Platform	ServiceNow Developer Instance	Core ITSM & Catalog configuration
Workflow Engine	Flow Designer	Automates request approvals and notifications
Data Management	CMDB / Asset Tables	Stores and tracks laptop details
Reporting	Performance Analytics	Generates SLA and activity reports
Security	Role-Based Access Control (RBAC)	Protects sensitive records
Notification	ServiceNow Email Engine	Sends automated messages

3.4. Benefits of the Chosen Stack:

- Cloud-Based: Accessible anywhere, anytime.
- Low-Code: Reduces development time and complexity.
- Secure: Data encryption and access control are built-in.
- Scalable: Can handle additional catalog items and workflows easily.
- Integrated: Works seamlessly with ServiceNow's asset and workflow modules.

Conclusion:

The Requirement Analysis phase clearly defines the functional scope, data flow, and technology setup for the project.

By leveraging ServiceNow’s modular design and automation features, this solution ensures that laptop requests are processed efficiently, securely, and transparently — setting the foundation for a fully operational digital service workflow.