

## PROJECT DESIGN PHASE

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Team ID	NM2025TMID01898
Project Name	Laptop request catalog item

### 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.

