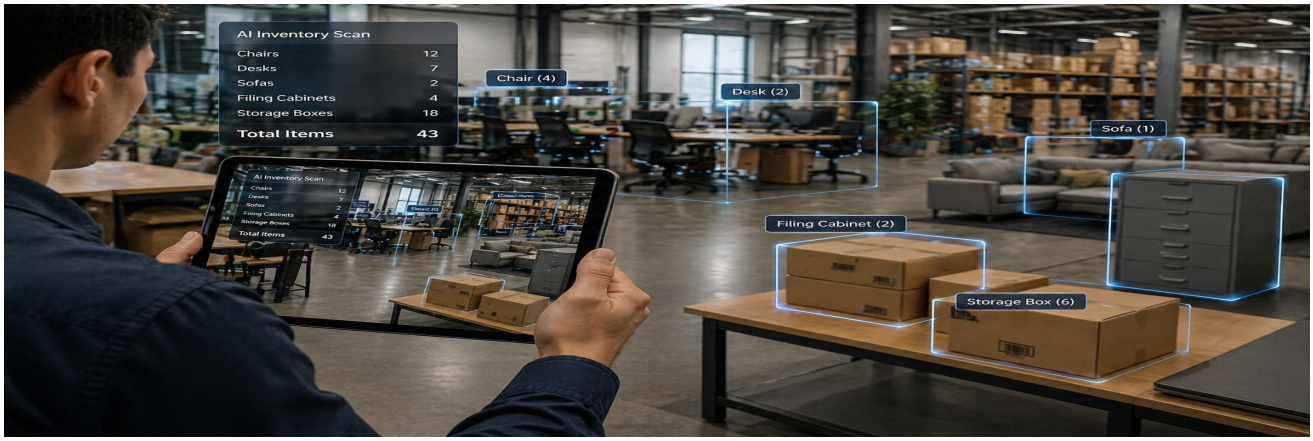
Case Study

AI Inventory & Video Recognition Platform

Turning site walkthroughs into structured inventory records using AI-assisted video capture, object recognition, human review, project hierarchy, and export-ready reporting.



The real challenge was not just recognizing objects. The real challenge was building a complete operational workflow around AI - capture, detection, human review, project organization, export, and future scalability.

Overview

Cluedo Tech designed and built an AI-powered inventory workflow that helps users capture physical spaces, identify furniture and equipment, review AI-detected items, organize results by project, and export structured inventory data.

The project combined mobile capture, AI object recognition, deduplication thinking, human review, cloud storage, project hierarchy, and export-ready reporting into one practical workflow.

This was designed as a usable operational product, not a thin AI demo.

Project Snapshot

Project Type

AI-powered inventory and asset recognition application

Core Workflow

Capture -> Detect -> Review -> Organize -> Export

Users

Field staff, managers, admins, internal operations teams

AI Function

Object detection, categorization, counting, deduplication support

Output

Structured inventory records and export-ready reports

Delivery Role

Product workflow, UX, architecture, AI delivery, modeling, support

What This Case Study Proves

Real Workflow

The work connected business process, users, data, and delivery.

Practical AI

AI was embedded where it improves speed without removing accountability.

Production Thinking

The solution considered review, controls, reporting, and future scale.

Delivery Discipline

Cluedo Tech focused on usable implementation, not AI theater.

The strongest proof is not the feature list. It is the connection between business need, workflow, architecture, controls, and outcome.

The Business Problem

Manual inventory collection is slow, inconsistent, and hard to verify. Field teams often rely on spreadsheets, photos, notes, and memory to document rooms, furniture, equipment, and physical assets.

That creates problems when the inventory has to be reviewed, corrected, shared, exported, or used later for planning and operational decisions.

Manual Capture

Inventory records depended on slow manual entry, handwritten notes, spreadsheets, and disconnected photos.

Inconsistent Counting

The same object could be missed, counted twice, or categorized differently by different users.

No Review Layer

AI output needed a human validation process before it could be trusted for operational use.

Weak Project Structure

Inventory had to be organized by client, project, site, room, and category - not just stored as raw detections.

Limited Auditability

Without source images or video, it was hard to verify how an inventory record was created.

Difficulty Exporting

The final output needed to be structured, clean, and usable outside the app.

The core problem was not "Can AI detect furniture?" The real problem was "Can AI help produce a reliable inventory workflow that people can actually use?"

What Cluedo Tech Built

Cluedo Tech designed the platform as a complete AI-assisted inventory workflow - not just an object recognition feature.

The system combined video/image capture, AI detection, human review, project organization, cloud storage, and export-ready reporting into one practical application.

Video & Image Capture

Users capture rooms, offices, storage areas, furniture, equipment, and assets using a mobile or tablet device.

AI Object Detection

The system identifies likely objects such as chairs, desks, cabinets, boxes, and equipment from captured media.

Inventory Review

Users can confirm, edit, delete, or adjust detected items before the inventory is finalized.

Project Organization

Inventory can be organized by client, project, location, room, asset type, and status.

Cloud Storage

Captured media, inventory records, project data, and supporting files can be stored securely for later access and review.

Export-Ready Reporting

Final inventory data can be exported into structured formats for reporting, operations, or downstream systems.

The value was not in one AI feature. The value was in connecting AI to a usable business workflow.

From Site Walkthrough to Structured Inventory

The workflow was designed to turn raw video or image capture into reviewed, organized, export-ready inventory data.

Step	User Action	System Action	Output
Create Project	Manager sets up project, site, or room structure	System creates an organized workspace	Project inventory shell
Capture Space	Field user records video or images	Media is uploaded and tied to the project	Source visual data
AI Detection	User submits capture for analysis	AI identifies objects, categories, and draft counts	Draft inventory
Human Review	User validates, edits, removes, or confirms results	System updates inventory records	Verified inventory
Export Inventory	User exports approved data	System generates structured output	Report-ready inventory

AI creates the draft. People control the final record. That balance is what makes the workflow usable in the real world.

Practical Architecture for Real-World AI Workflows

The platform was designed around a practical architecture: capture the physical environment, process it through AI, allow human review, store the results, and export clean inventory records.

User Interface Layer	Mobile / tablet capture + inventory review
Application Layer	Projects + users + roles + inventory records
AI Processing Layer	Object detection + categorization + counting support
Storage Layer	Media storage + inventory data + project records
Output Layer	Exports + reports + operational data

The platform was designed as a workflow system first, and an AI system second. That is the right order.

AI Assistance With Human Control

For business workflows, AI output cannot simply be accepted blindly. The platform was designed so AI produces a draft inventory, while users retain control over the final record.

This improves speed without sacrificing accountability.

Risk	Control
Object misidentified	User can correct the category before finalizing.
Object missed	User can manually add an item.
Object counted twice	Review process allows duplicate correction.
Low-confidence detection	User can validate before export.
Wrong project or room assignment	Inventory can be organized and corrected inside the project hierarchy.
Export errors	Final data can be reviewed before it leaves the system.

Important Principle: AI should accelerate the work, not remove accountability. The system was designed to keep people in control of the final inventory record.

Business Value Delivered

The project created more than an AI feature. It created a scalable inventory workflow that improves speed, consistency, review, auditability, reporting, and future readiness.

Faster Field Work

Users can capture visual inventory data faster than typing every item manually.

Better Consistency

Standardized capture and review workflows reduce variation between users.

Improved Accuracy

AI-assisted detection plus human review creates a stronger quality-control process.

Greater Auditability

Captured media supports review, validation, and future reference.

Cleaner Reporting

Inventory data can be organized and exported in structured formats.

Scalable Foundation

The platform can evolve toward more users, more object categories, integrations, and client-facing workflows.

Before and After

The project helped turn a manual, fragmented inventory process into a structured AI-assisted workflow with review, organization, and export built in.

Before

- Manual notes, photos, and spreadsheets
- Slow item-by-item entry
- Inconsistent categories and counts
- Difficult to verify inventory source
- Limited project organization
- Manual cleanup before reporting
- Hard to scale beyond internal use

After

- AI-assisted capture and structured inventory records
- Faster video/image-based capture
- Standardized detection and review workflow
- Captured media connected to records
- Client, project, site, room, and item hierarchy
- Export-ready structured output
- Foundation for broader operational deployment

Result: A manual inventory process became a structured, AI-assisted product workflow.

Outcome

Cluedo Tech helped transform a raw operational need into a working AI-enabled inventory platform and delivery workflow.

The project created a foundation for capturing physical spaces, identifying furniture and equipment, reviewing AI-generated inventory, organizing records by project, and exporting structured data for operational use.

Most importantly, the system was designed for real-world adoption: AI provides speed, while human review provides control.

Productized Workflow

A manual process was converted into a repeatable digital workflow.

AI-Enabled Operations

Video and image capture became a practical input for inventory creation.

Scalable Platform Foundation

The system can expand into future releases, integrations, and broader client use cases.

This is the difference between an AI demo and an AI product: the demo recognizes objects; the product helps a team do real work.

Have a Similar Workflow to Modernize?

Cluedo Tech helps organizations turn manual, fragmented, or spreadsheet-heavy workflows into practical AI-enabled software systems.

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