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Material Disposal Feature

Case Study

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Domain SME

Test Lead
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01 Project Overview

About This Project

As part of a Malaysian government initiative to reduce procurement costs across the oil and gas sector, a marketplace platform was developed to facilitate the sharing and reutilisation of O&G materials among 16 licensed member companies operating nationally. Materials in scope include pipes, valves, drills, and related equipment.

This case study documents the Material Disposal feature: a system module designed to digitise, standardise, and govern the disposal of O&G materials across all 16 member companies under the directive of the national governing body.

Industry Oil & Gas, Government-mandated digital transformation

02 Problem Statement

Pain Points

Optimization Opportunity

Disposal submissions handled entirely via Excel. Inventory updated manually, creating irreconcilable stock discrepancies. Approvals ran through email with no audit trail, no version control, and no accountability.

Operational burden

Managers fielded thousands of disposal requests, particularly during Q1 disposal season, through inbox management alone. Critical reviews were missed or delayed. Day-to-day operations displaced by administrative overhead.

Governance Evolution

The national governing body had no visibility into what was being disposed of, at what quantity, or at what value. Figures did not tally. Material flows could not be tracked, resulting in unquantified financial losses and increased waste.

The trigger

The national governing body issued a directive: all material disposal must be processed through the marketplace platform, fully logged, and available for audit at any time. No exceptions.

03 Goals & Objectives

What We Set Out to Achieve

Primary objective: Establish an end-to-end system-based disposal flow that replaces all manual processes, from inventory visibility through submission, review, approval, and audit logging.

Specific objectives

- Digitise and display live member company inventory within the platform with accurate stock numbers and material codes.
- Build a structured disposal submission flow requiring mandatory supporting documentation and remarks.
- Implement a multi-tier review and approval workflow that enforces governance before any material is disposed.
- Standardise the flow across all 16 member companies, each with varying internal processes, into a single compliant baseline.
- Obtain national governing body endorsement and sign-off on the standardised flow as the national standard.

Constraints

Tight delivery timeline. Sixteen member companies with divergent disposal practices. Technical dependency on SAP integration for inventory accuracy

How We Measured Success

Compliance	100% of disposal activity processed through the marketplace platform. No off-platform submissions accepted.
Data Integrity	Stock counts in the system must tally with company-side reports. All disposed materials carry valid supporting documentation.
Auditability	Every disposal record logged, traceable, and accessible for audit at any time
Adoption	All 16 member companies fully onboarded and operationally active on the disposal module.
Sign-Off	UAT formally signed off by focal representatives from all 16 member companies and the national governing body. The definitive measure of completion and compliance readiness.

How We Understood the Problem

Discovery approach

The process began with a structured review of existing disposal methods in collaboration with the product owner. This was followed by workshops with focal representatives from all 16 member companies, and direct interviews with the national governing body's focal team to align on regulatory expectations before any solution design began.

Key findings

- Each member company had built its own disposal process independently. Different approval layers, different departments, different documentation requirements, different reporting formats. No shared baseline existed.
- Approval structures were particularly complex. Some companies had segregated disposal responsibilities across multiple departments with long internal sign-off chains. Others were streamlined but lacked documentation rigour.

- Stakeholder tension surfaced early: business stakeholders wanted rigid process controls; technical stakeholders prioritised data accuracy. Both were right. The design had to serve both without compromising either.

Regulatory baseline

Existing disposal documentation and the national governing body's policies were reviewed in full. These defined the non-negotiable requirements that no stakeholder could override.

06 Strategy & Approach

How We Solved It

Minimum viable governance

Rather than replicating the most complex process or forcing the simplest, a governance floor was established. Every member company had to meet it. How they layered further internal processes above it was their own concern. The system enforced the minimum, not the ceiling.

MoSCoW-driven workflow design

The must-have layer defined three mandatory tiers: Company Reviewer, Company Admin Approval, and Material Governance Approval from the national governing body. No disposal passes without all three. Mandatory documentation, supporting files, remarks, and audit records, was non-negotiable at submission.

Role-based access

Company users can create disposal requests but cannot approve. Company admins can create, review, and approve within their own scope. Material Governance can approve across all companies but cannot create or manage inventory. A deliberate separation of powers.

Inventory accuracy

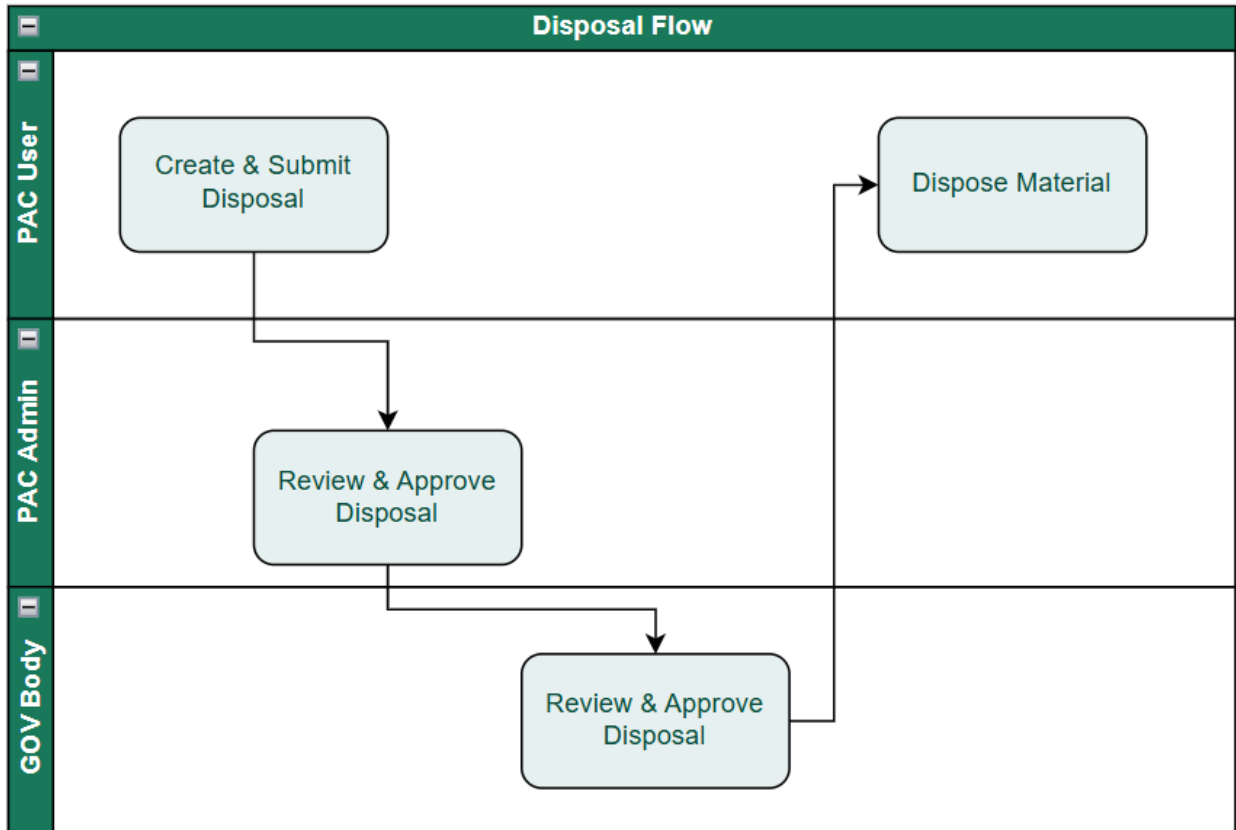
Stock count integrity was managed through collaboration with the data team and Level 3 support handling SAP integration. Material data flows from a validated source, not manual input.

Quality assurance leadership

As Test Lead, the testing strategy covered test case design, defect management, regression coverage, and UAT coordination with all 16 member companies and the national governing body. Every stakeholder sign-off was preceded by structured test cycles with documented evidence.

Agile delivery

Requirement gathering, user story authoring, stakeholder sign-off, sprint planning, refinement, and phased deployment. The dual BA and Tester Lead role spanned the full cycle, from translating business requirements into user stories through to validating delivery against acceptance criteria.



Standardised approval flow and role access matrix across all 16 member companies

What We Delivered



RM 100 million in tracked value

Material disposal value tracked through the platform from go-live to end of 2025. This figure, previously invisible to the national governing body, is now fully logged, auditable, and reportable.

Full adoption across all member companies

All 16 member companies are active on the disposal module. The national governing body's directive made system-based disposal mandatory. Adoption was not optional.

Audit readiness achieved

Every disposal record is logged with supporting documentation, approval history, and a full audit trail. The compliance gap that triggered this project has been closed.

Waste reduction improved

With disposal activity now tracked and governed, material reutilisation decisions are better informed, directly supporting the platform's broader mandate to reduce O&G; waste nationally.

Manual processing contained, not eliminated

Excel is still used internally by some member companies during peak disposal season given the sheer volume of materials. All records must be uploaded into the platform, which serves as the single source of truth. The manual step is contained and controlled, not unaccountable.

Positive user feedback

Feedback from company focals and the national governing body post-launch confirmed the platform solved the core pain points: visibility, tracking, and accountability

What This Project Taught Me

The hardest part

Managing competing perspectives from 16 companies simultaneously, each with valid but divergent views on how disposal should work, and finding a position that was defensible, compliant, and workable for all. The answer was always to anchor to the regulatory baseline, not to any single company's preference.

What I would do differently

Implement hard requirement freeze points with formal sign-off from the outset. Scope changes mid-sprint, particularly around mandatory documentation, had downstream impact on delivery. Accountability needs to be contractual, not assumed.

What this project taught me

Providing options is the most effective tool in complex multi-stakeholder environments. Rather than presenting a single recommendation and defending it, showing the trade-offs of two or three paths consistently led to faster, better-quality decisions from business, technical, and government stakeholders alike.

What I am most proud of

Becoming the recognised SME for disposal across the marketplace platform. Sustaining the domain independently through run and maintain. And building a professional network across 16 companies and one of Malaysia's most significant government-led industry transformation programmes.