

Intelligent Workflow Automation

Reference Architecture

This brief outlines a reusable reference pattern for discovery, architecture, implementation, and operational rollout.

Problem

Operational documents and approvals are often routed through manual queues, email, spreadsheets, and tribal policy knowledge.

An intelligent workflow reduces repeat handling while preserving human review, policy controls, and auditability.

Typical Architecture

Documents enter extraction, validation, workflow orchestration, AI and rules evaluation, human approval, enterprise API handoff, and audit storage.

Components

Document intake, OCR or structured extraction, validation rules, policy engine, human review queues, approval actions, ERP/API integration, and audit log.

Security Considerations

Limit document access by role, redact sensitive fields where practical, audit every decision, and separate model suggestions from final approvals.

Integration Pattern

Use asynchronous handoff to enterprise APIs with retry, idempotency keys, and reconciliation so approvals are traceable and recoverable.

Implementation Approach

Map the workflow, classify exceptions, design approval states, run side-by-side validation, then incrementally activate automation for low-risk cases.

Operational KPIs

Cycle time, straight-through processing rate, manual touches, exception rate, approval aging, rework rate, and audit completeness.

Deployment Model

A secure workflow application with background workers, queue-aware processing, PostgreSQL audit persistence, and API integration boundaries.

BMDigitals Engagement Model

Process discovery, workflow architecture, automation pilot, integration build, control validation, and

operational enablement.

Reference architecture. Final implementation depends on the client's operational and technical environment.

