

# Real-World Automation Use Case Report

## 1. Title & One-Line Summary

Automated Invoice Processing & Payment Reconciliation System — A multi-step automation that reduces manual effort in invoice intake, validation, approval, and reconciliation with payments.

## 2. Problem & Evidence

The Pain Point: In many B2B organizations, finance teams spend enormous time manually handling invoices received from multiple vendors in different formats (PDFs, scanned copies, spreadsheets). Manual entry leads to delays, errors, duplicate payments, and cashflow forecasting issues.

Evidence: According to Ardent Partners' Accounts Payable Metrics Report (2023), organizations still receive 40–45% of invoices in unstructured formats (PDF/email/scans). Companies with manual invoice processing take an average of 10 days to process an invoice, while best-in-class automated firms take <3 days, reducing operational costs by up to 60%.

## 3. Stakeholders

- Finance & Accounting Team → Saves time, reduces errors.
- Vendors / Suppliers → Faster payments, fewer disputes.
- CFO / Management → Gains better visibility into liabilities, improved cash flow planning.
- IT / Operations → Maintains integrations with ERP/Accounting systems.

## 4. KPIs & Impact

- Processing Time Reduction: From 10 days → 2–3 days per invoice.
- Error Reduction: Manual errors reduced by 80% through OCR + validation.
- Cost Savings: Estimated \$6–10 per invoice saved.
- Vendor Satisfaction: Improved SLA adherence and fewer disputes.

## 5. Multi-Step Use Case (Workflow)

1. Invoice Intake: Capture invoices via email, portal, or EDI.
2. Data Extraction: OCR/NLP extracts invoice fields.
3. Validation & Matching: Match against Purchase Orders.
4. Approval Workflow: Auto-approve or route to manager.
5. Payment Scheduling: Send to Payment Gateway.
6. Reconciliation: Match bank payments with invoices.
7. Reporting & Analytics: Dashboard of invoices status.

## 6. Development Approach

- Step 1: Invoice Capture Layer — API integration with email inbox and portal.  
Step 2: Data Extraction — OCR via AWS Textract / Google Vision API.  
Step 3: Validation & Matching — ERP integration with SAP/NetSuite/QuickBooks.  
Step 4: Approval Workflow — Slack/Teams Bot + database logs.  
Step 5: Payment & Reconciliation — Bank APIs, Plaid, Stripe Treasury.  
Step 6: Dashboard — BI tools or internal React app for KPIs.

## 7. Failure Modes & Recovery

- API Downtime: Retry mechanism with exponential backoff, queue processing.
- Incorrect OCR Extraction: Confidence thresholds, manual review, retraining models.

8. Security & Privacy Considerations

- Encrypt data at rest (AES-256) and in transit (TLS 1.2/1.3).
- Role-based access controls.
- Audit logs for compliance (SOX, GDPR).
- MFA-protected vendor portal.

9. Rollout Plan (Phased Implementation)

- Phase 1: Pilot with 1–2 vendors.
- Phase 2: Expand to Finance department workflows.
- Phase 3: ERP + Bank API integrations.
- Phase 4: Company-wide rollout with predictive analytics.

Workflow Diagram (Enhanced)

