Accounts Payable Automation

Introduction:

This application is a modern, cloud-based Accounts Payable (AP) automation solution designed to help organizations transform their manual, error-prone invoice processing into a streamlined, efficient, and intelligent digital workflow. It supports the full lifecycle of invoice processing from capture to approval, ERP integration, and optional payment with powerful automation and real-time visibility.

Client details:

Name: Confidential | **Industry**: Finserv | **Location**: USA

Technologies:

Java 8, Spring MVC, jQuery, JSP, HTML, CSS, MariaDB, ABBYY FlexiCapture

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Problem Statement:

Before implementing the solution, many organizations faced several persistent Accounts Payable related challenges:

1. **Manual Invoice Processing**
    AP departments relied heavily on paper or email-based invoices. This led to delayed approvals, high error rates, and labor-intensive reconciliations.

2. **Lack of Visibility**
    AP teams lacked real-time visibility into invoice status, making it difficult to track pending approvals or catch bottlenecks.

3. **Disconnected Systems**
    Existing solutions often lacked integration with ERP systems, requiring double data entry and increasing the risk of discrepancies.

4. **Compliance and Audit Risks**
    Inconsistent approval workflows and scattered documentation posed risks during audits and regulatory reviews.

5. **Cost Inefficiencies**
    The average cost to manually process a single invoice ranged from $12 to $20, depending on complexity and workforce costs.

Solution Provided:

The application addressed these pain points with a focused, streamlined, and configurable solution:

● **Intelligent OCR and Data Capture**
  Uses advanced AI to extract and validate invoice data with high accuracy, significantly reducing the need for manual entry.

● **Automated Workflow Engine**
  Configurable workflows allow businesses to create multi-level approval chains based on invoice type, amount, or vendor.

● **Real-time Dashboard and Analytics**
  Provides visibility into AP metrics such as cycle time, outstanding approvals, and payment readiness.

● **ERP Integration**
  Seamlessly connects with major ERP systems like NetSuite, Microsoft Dynamics, SAP, and Sage to ensure real-time synchronization.

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- **Cloud-Native Architecture**
  Allows rapid deployment with minimal IT dependency, ensuring quick ROI and scalability.

- **Audit Trail & Compliance Support**
  Captures every action taken on an invoice, supporting compliance with SOX, GAAP, and internal policies.

Business Impact:

Key outcomes from the deployment:

- Reduced invoice processing time from 12 days to 2 days
- Lowered AP operating costs by 78%
- Achieved full audit trail compliance for the first time
- Enabled remote invoice approval via mobile access
- AP staff reallocated to vendor management and spend analysis roles

Project Description:

The automated accounts payable (AP) solution is designed to streamline and digitize the invoice management process for businesses. It integrates with ERP systems to automate invoice capture, routing, approval, and payment processes, eliminating the need for manual data entry and physical paperwork. By leveraging artificial intelligence and machine learning, the solution helps organizations reduce processing time, increase accuracy, and improve visibility into their AP operations.

The core functionality of the application begins with **invoice ingestion**, where invoices are received in various formats—email, PDF, scanned documents, or EDI. The system uses Optical Character Recognition (OCR) technology to extract key invoice data such as vendor details, invoice number, date, line items, and amounts. This extracted data is automatically validated against purchase orders (POs) and vendor master records to ensure accuracy and compliance.

Once validated, the invoices enter the **workflow and approval** phase. The solution provides customizable workflow automation that routes invoices to the appropriate approvers based on predefined rules such as department, invoice amount, or GL coding. Approvers are notified via email or within the application, and they can review, comment, or approve invoices from any device, enhancing collaboration and decision-making speed.

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After approval, invoices are queued for **payment processing**. The platform integrates with major ERP systems and financial platforms, enabling seamless payment execution while maintaining audit trails and compliance. It supports multiple payment methods, including ACH, checks, and virtual cards. The system also offers dashboards and reporting tools to monitor AP performance, track KPIs, and ensure financial controls are met.

Overall, the application delivers a highly efficient, secure, and scalable AP automation solution. It reduces operational costs, minimizes errors, and gives finance teams real-time visibility into cash flow and liabilities. Its cloud-based architecture also ensures quick deployment, easy scalability, and continuous updates to meet evolving business needs.

Modules:

Supplier (Invoice Sender)

Suppliers are the source of invoices in the AP process. They may send invoices via email, EDI, or upload them through a supplier portal. These invoices can be in PDF, scanned image, or structured digital formats. The supplier initiates the transaction, and their data is critical for accurate matching and payment processing. Proper supplier onboarding and validation are also key to avoiding fraud and duplicates.

Buyer App (Invoice Intake Interface)

The Buyer App acts as the entry point for receiving and consolidating incoming invoices. It can be configured to pull invoices from dedicated email inboxes, FTP servers, or direct uploads. The Buyer App normalizes incoming invoice formats and sends them to the OCR engine for further processing. It's also responsible for organizing metadata like sender info, received time, and document format.

ABBYY OCR & Data Capture

This module uses **ABBYY**, a powerful Optical Character Recognition (OCR) and data extraction engine, to read and digitize invoice content. It extracts key information such as:

- Vendor name and address
- Invoice number and date
- Line-item details (product, quantity, unit price)
- Tax, freight, and total amounts

ABBYY also uses machine learning and validation rules to improve accuracy over time, reducing manual corrections.

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Validation & Matching (PO/Non-PO)

Once the invoice data is captured, it undergoes **automated validation**:

- **PO Invoices**: Matched against existing purchase orders and goods receipts.
- **Non-PO Invoices**: Validated based on business rules, cost centers, and historical behavior. This step ensures that only accurate, legitimate invoices proceed to the approval process. It significantly reduces duplicate, fraudulent, or overcharged invoice entries.

Approval Workflow (Role-based Routing)

Invoices that pass validation enter a **dynamic approval workflow**, tailored to your company's org chart and policies. Rules may route invoices based on:

- Amount thresholds (e.g., invoices over $10,000 need Director approval)
- Department or cost center
- Project or account codes

Approvers are notified via email or mobile and can approve, reject, or comment directly from the platform. Audit logs ensure all actions are traceable.

Accounts Payable Core

This is the **central hub** of the AP automation process:

- Manages all business logic
- Applies exception handling
- Integrates validation, approvals, and reporting
- Manages connections with ERP systems and supplier portals

It ensures a seamless and compliant invoice lifecycle, while giving finance teams visibility and control.

Oracle ERP (Integration for Payment & GL)

The solution integrates directly with **Oracle ERP** to:

- Sync vendor master and purchase orders
- Push approved invoices for payment
- Record transactions in the general ledger

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This bi-directional sync ensures that both systems remain in sync and audit-ready. Integration can be real-time (via APIs) or batch-based, depending on ERP setup.

Payment Execution (ACH, Check, vCard)

After invoices are approved and pushed to Oracle, payments can be executed using:

- **ACH (Automated Clearing House)**: Direct bank transfers
- **Checks**: Printed or outsourced
- **Virtual Cards (vCard)**: Single-use digital cards for secure payments

The platform can interface with payment gateways or banks, and supports payment scheduling, approval, and reconciliation tracking.

Audit & Reporting Dashboard

Provides real-time insights into:

- Invoice cycle time
- Approval bottlenecks
- Outstanding liabilities
- Spend analytics

Dashboards are customizable and exportable. They support compliance with financial regulations and internal audit requirements by providing full traceability of every invoice action.

Supplier/Vendor Portal

The portal gives suppliers real-time visibility into:

- Invoice status (received, approved, paid)
- Payment dates and remittance details
- Dispute resolution tools (comments, inquiries)

This improves supplier relationships, reduces inquiry emails to AP teams, and builds trust through transparency.
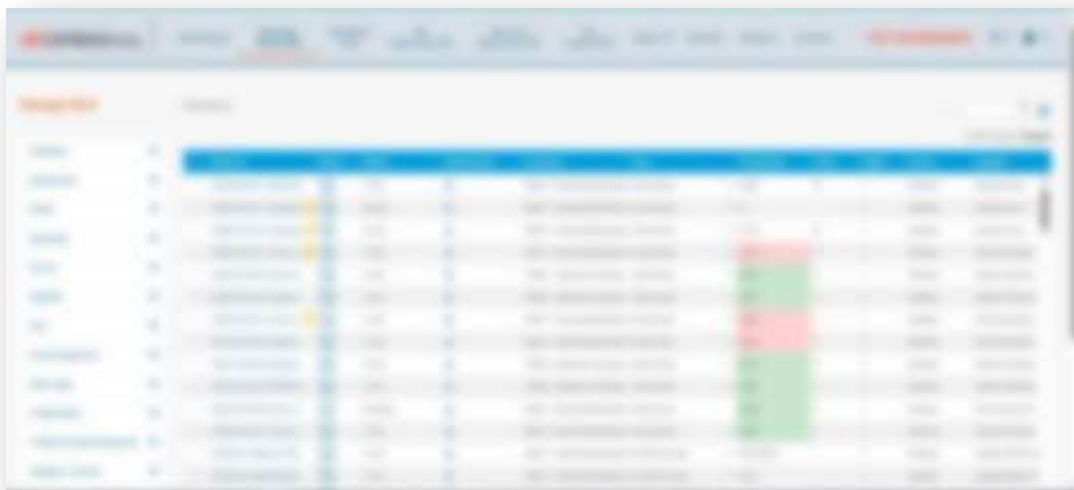
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Application Dataflow Diagram:
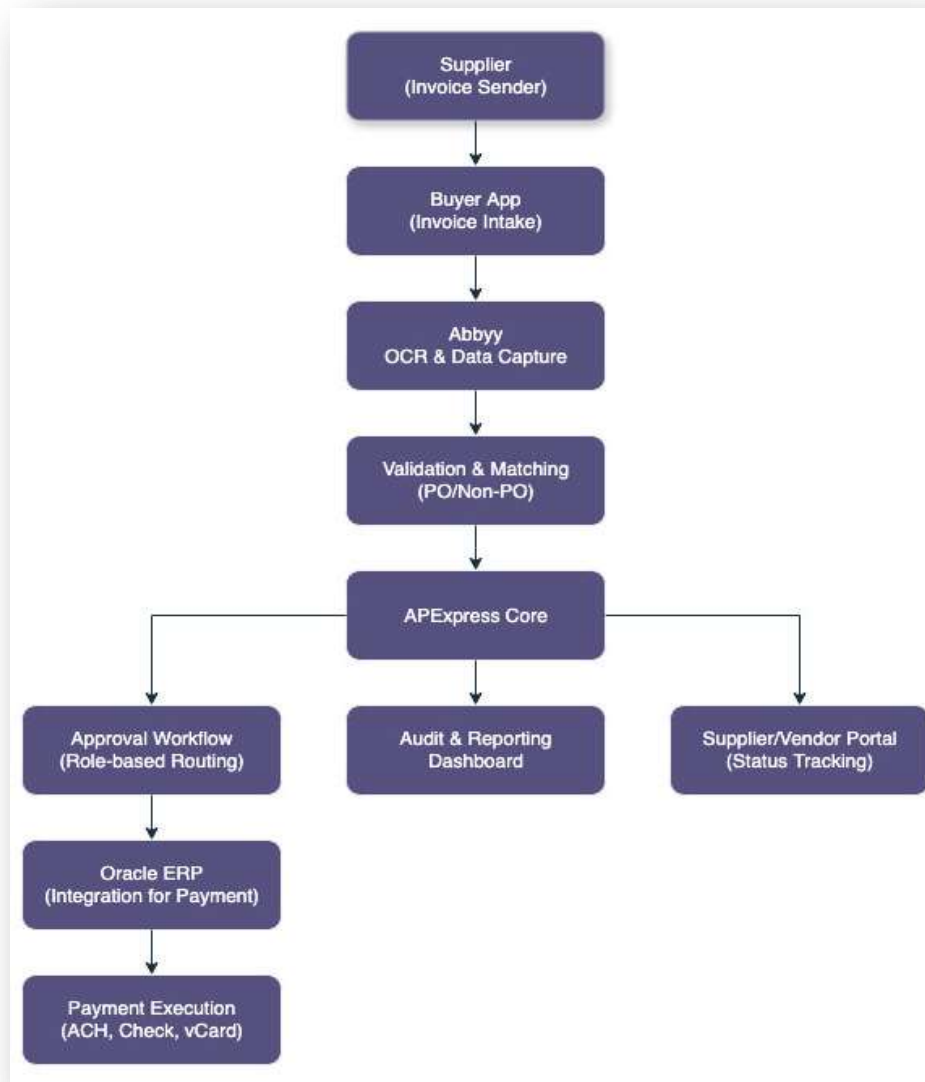
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Screenshots:

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