

CS 410 Lab 1 Individual Introduction Submission

AI<sup>2</sup> – Artificially Intelligent Invoices

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## **1 Introduction**

### **1.1 Background**

Many organizations handle tens of thousands of invoices annually, predominantly through manual processes that create inefficiencies and risk. Manually handling those invoices can cost between twelve and forty dollars per invoice. Automating that process drops that price significantly to between three and six dollars.

Manually matching incoming invoices to existing purchase orders leads to delays, data entry errors, and backlogs across accounting departments. Clearly, a computer-automated system is far-better suited to the task.

### **1.2 Problem Statement**

To help us better understand the problem, let's look at one particular company facing these challenges as a case study. Atlantic Diving Supply receives around 150,000 invoices annually from roughly three thousand suppliers.

To handle this volume, ADS employs a six-person accounts payable team. Each member of that processes roughly fifty invoices per member each day. This manual process of reviewing each invoice and then comparing it with outstanding purchase orders causes:

- Volume pressure → roughly six hundred invoices daily.
- Errors → Duplicate payments and PO mismatches.
- Delays → Slower payments and supplier dissatisfaction.
- Stress → AP staff spend most of their time checking instead of analyzing.

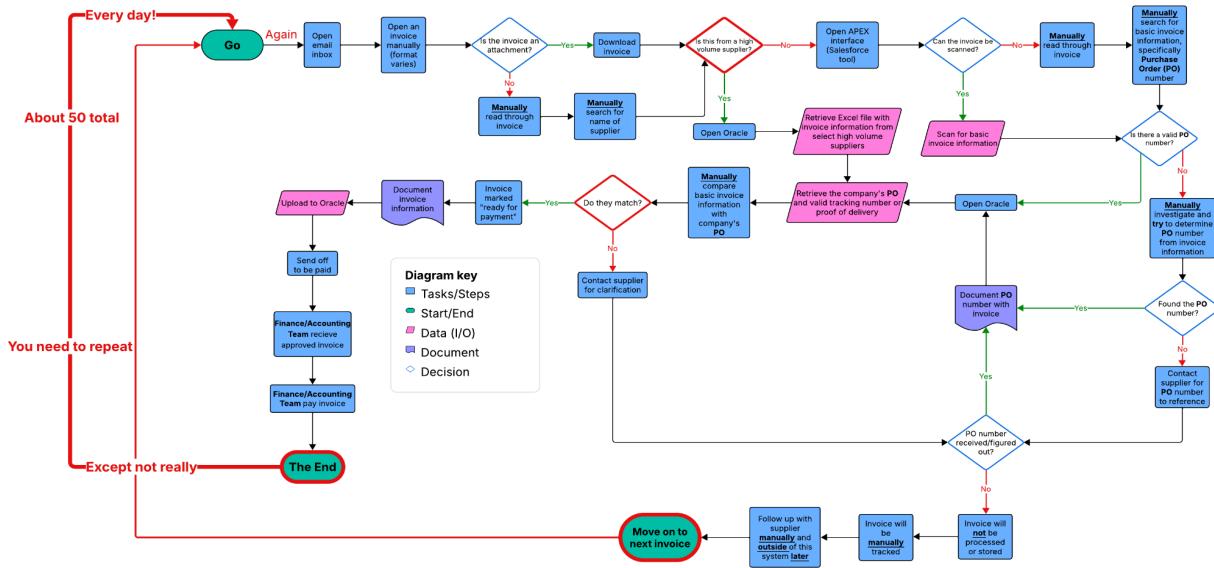


Figure 1: Current ADS invoice matching workflow

A solution would not only help the ADS AP team, it would also help the suppliers receive payment more quickly, and it would help ADS management track financial performance.

### 1.3 Solution

The solution for these problems is AI<sup>2</sup> (Artificially Intelligent Invoices), a web-based intelligent automation system for invoice management.

AI<sup>2</sup> reduces manual workload, accelerates invoice turnaround, bolsters supplier satisfaction, and improves data accuracy with AI-driven recommendations.

AI<sup>2</sup> leverages artificial intelligence to match invoices to POs with confidence scoring, giving companies the insight on what invoice-PO matches need reviewing, which in turn teaches the AI model so that the system does not make the same mistake twice.