

The Business Case for AI-Led AP Automation

Actionable insights and a framework for driving AP transformation



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Introduction

86%, according to the Institute of Finance & Management (IOFM), is the percentage of Accounts Payable (AP) teams claiming “at least some” level of process automation in 2022.

It’s an impressive number and represents nearly a doubling from the 45% claiming the same as recently as 2018. Six key reasons often cited for the intense, recent focus on AP process automation are:

- Tight markets for skilled labor/talent — extending worldwide and exacerbated by ongoing retirements among knowledgeable Baby Boomers.
- High costs (time and money) associated with hiring and training new AP personnel.
- Systemic shift to more work from home (WFH) and hybrid work arrangements, stemming from the Covid-19 pandemic.
- Imperatives to improve and strengthen supplier relationships, stemming from the pandemic’s widespread supply-chain disruptions.
- Increasingly demanding government/regulatory requirements.
- Perceived risk of a global economic recession occurring in 2023 — driving a “do more with less” dynamic for AP leaders.

To this list, we would add a seventh important AP automation trend driver: the arrival on scene of practically-applicable **Artificial Intelligence (AI)**.

Big strides in AI technologies — computer vision, natural language processing (NLP), machine learning (ML), deep learning, and so forth — are paving the way for a sophisticated new reality in AI-led AP automation.

The initial wave of AP automation focused primarily on converting information and workflows from manual to digital (efficiency-focused). The new wave, already underway, emphasizes AI-led automation and AP process effectiveness in support of increasingly sophisticated and strategic approaches to corporate cash, financial, supply-base, and other management imperatives.

Despite a decent level of automation, IOFM benchmark performance metrics (2022) for AP processes paint a dismal picture:

- Straight-through processing (STP) rates are low across all organizations regardless of invoice volumes.
- Only 4% of PO-based invoices are paid 100% on time.
- Days payables outstanding (DPO) is less than 20 days for only 19% of respondent organizations.
- Only 5% of PO-to-invoice matches are accurate on the first try.
- More than a third of respondent organizations have more than 1% of duplicate payments.
- About 25% of organizations have more than 10% of transactions requiring correction.

Context

This white paper is for leaders in Finance, Accounting, AP, Shared Services, Global Business Services, and Automation Centers of Excellence (CoE) looking to:

- Gain a clearer understanding of complex and highly-fragmented markets for AP automation, including AP Invoice Automation (APIA) solutions.
- Learn how AI is driving innovation and an emerging new state of the art in AP process automation.
- Determine cost savings/avoidance and other performance improvement potential and how to build a solid business case for investing in AI-led AP automation.
- Obtain insights into what corporate/internal factors might influence AP automation solution choices.
- Know what to look for when selecting the right AP Automation solution provider.
- The importance of synergy among people, process, and technology aspects in ensuring that AP automation initiatives stay on track and deliver business value.



AP Automation: A Brief History and Context

To grasp the truly revolutionary potential for AI in AP automation, it's important to understand where and why prior automation attempts have failed or fallen well shy of expectations.

The history of AP automation reaches all the way back into the late 1960s/early 1970s with the birth of Electronic Data Interchange (EDI), which, for a very long time, focused mainly on military and public-sector transportation and logistics applications.

Fast-forward to the 1990s when Internet access became widely available across the private sector, and business enterprises began exploring all the performance-enhancing possibilities inherent in the new digital connectivity.

The intent of EDI was to enable “automated commercial ‘conversations’ between two entities”. That, however, required widely adopted standards for how all the various bits of critical information would be formatted, named/labeled, machine-validated, and so forth. And, driven by various government- and industry-level standardization efforts, dozens of competing EDI standards emerged. That had the ultimate effect of limiting the technology to fairly narrow practical uses.

Alongside the evolution in EDI was the rise of Manufacturing Resource Planning (MRP) systems, which evolved into Enterprise Resource Planning (ERP). The earliest versions of these systems were generally homegrown inside of manufacturing entities that were attempting to optimize the amounts of cash they had tied up in direct and indirect materials inventories without jeopardizing their abilities to keep

production lines running and delivering finished products on-time to customers.

As with EDI, however, MRP/ERP turned out to be an exceptionally complex proposition, especially when attempting to extend the technology to the thousands of maintenance, repair, and operating (MRO) items, services, capital equipment, and other so-called indirect purchases that keep corporate entities running from day to day. Multiple standards for describing, formatting, validating, organizing/structuring, and manipulating relevant data emerged.

Enter eMarketplaces and eProcurement

Another important and converging trend to emerge in the late 1990s was the advent of eMarketplaces, eProcurement, spend analysis, and other procurement-led information and automation technologies.

An extraordinary amount of venture capital funding gave rise to dozens of Internet-powered B2B eMarketplaces that were intended to digitize and automate commercial transactions for goods and services all the way from product and supplier discovery, to orders, transportation and logistics, receiving, financing, invoicing, and payment.

Once again, however, due to the complexity of making it all work digitally, and the extreme difficulty of compelling multiple businesses, government, and industry entities to adopt common standards for systems and information interoperability, most eMarketplaces emerged along industry-specific lines with very narrow use cases.



Following the implosion of eMarketplaces in the late-1990s/early nineties, procurement-focused technology startups dove headfirst into building and refining solutions that would meet the specific information, digitization, and process/workflow automation needs of enterprise strategic procurement organizations. And due to the proximate nature and heavy overlap between procurement and AP functions, it wasn't long before these technology providers crossed into what might traditionally be seen as AP/accounting automation territory. Solutions emerged, for example, to address:

- **Supplier information management (SIM)** — onboarding and maintenance of legal and supplier master data to enable commercial transactions (which had often been a manual function in AP).
- **Spend analysis** — taking information from supplier invoices and/or payment transactions (so, essentially AP information) and aggregating/re-packaging/reporting in ways useful to procurement.
- **Supplier performance management (SPM)** — ensuring that suppliers/deals perform to all terms specified in legal contracts such as pricing, delivery lead times, product quality, but also including AP-related terms such as realizing negotiated discounts for meeting certain order-volume targets, for paying on-time, early, or within specific timeframes, etc.
- **Financial savings management** — ensuring that cost savings negotiated by procurement actually drop to a company's financial bottom line via spend budget and budget line-item reductions.
- **Supplier networks** — provider-powered versions of B2B eMarketplaces, enabling suppliers to efficiently present themselves to multiple buyers as legal sellers and execute commercial transactions with digital purchase orders, eInvoicing, ePayment functionality, and so forth.

As markets for ERP systems were, at the time, largely saturated, those providers also saw opportunities to expand their offers into the procurement space — typically in the form of “bolt-on” solutions. That created a competition, of sorts, between organically procurement-focused startups and traditionally finance- and accounting-focused ERP providers.

With procurement-focused startups and ERP providers battling it out over essentially the same source- or procure-to-pay automation space, there were plenty of other more narrowly or AP-only focused developers also entering the AP automation fray. Examples include:

- Traditional and startup payment processing solutions (p-cards, ACH, Paypal, etc).
- Solutions for invoice and other AP document scanning, digital conversion, organization, storage, and retrieval (optical character recognition (OCR) + database or content management systems/CMS).
- Automated transactions coding, PO-invoice document matching, error/fraud detection, routing/approval workflow, auditing, and so forth.

The outcome of this lengthy evolution and complexity is a contemporary solutions landscape for AP automation that is fragmented along multiple fault lines — for example by

- Functional needs/perspectives primarily addressed (AP/accounting/finance versus procurement)
- Industry verticals best served
- Size/complexity of enterprises served
- AP organizational structures (centralized, decentralized, hybrid, global Shared Services, etc)
- Internally developed/custom/homegrown versus externally developed/off-the-shelf
- Enterprise/behind-the-firewall installations versus SaaS/cloud delivery
- Process-focused point solutions versus end-to-end integrated suites.

The PO/Non-PO Divide

An additional, significant historical challenge for AP automation stems from long-standing difficulties in governing and tracking how people spend money in corporate environments. From a financial control perspective, the ideal governance policy is often considered to be: “No purchase order (PO), no payment to supplier” or “No PO-invoice match, no payment to supplier.” And plenty of companies have tried to make such policies work.

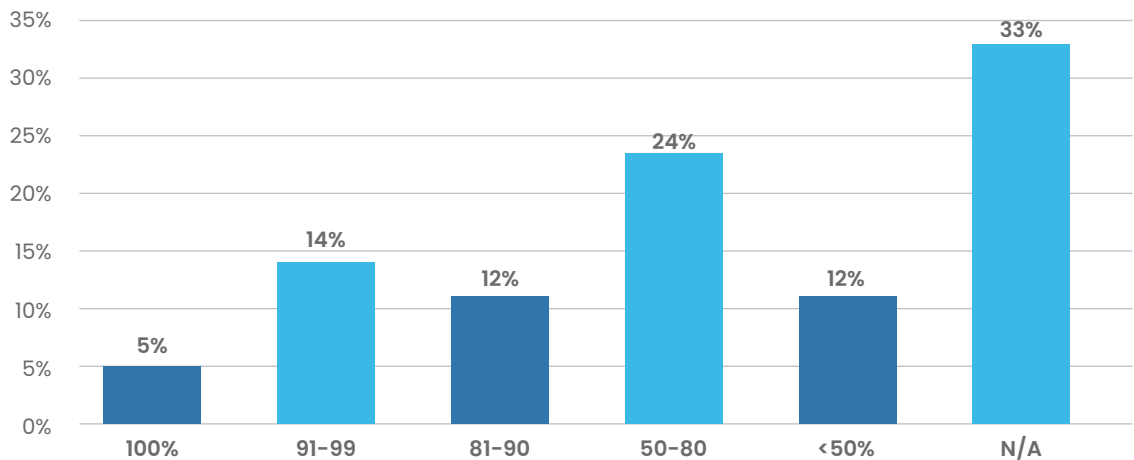
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But, according to 2022 IOFM benchmarking stats, nearly half of companies (48%) still have fewer than half of all supplier invoices tied to POs, and 73% report at least 25% of invoices being non-PO controlled.

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Even where business enterprises have achieved high levels (75% or more) of PO-controlled transactions, they still encounter significant challenges in automating the matching of invoices to purchase orders. Evidence of this persistent difficulty also shows up in the IOFM 2022 benchmarking statistics:

Figure 1 – PO-to-Invoice Match on First Try



SOURCE: IOFM, 2022 BENCHMARKING REPORTS, ACCOUNTS PAYABLE PERFORMANCE



Only 31% of companies successfully match 81% or more of invoices to POs on the first try, while 36% achieve less than 80% consistent first-time match rates, and a whopping 33% don't even track the metric.



Gartner notes that one significant challenge for automating invoice-to-PO matching ties to **asymmetric levels of detail** appearing in the source documents. For example, a supplier's invoice might break out items that are subject to sales or VAT taxes versus nontaxable items, while the agent issuing the original purchase order would have no need of making that distinction. This typically forces human intervention to sort out and confirm a match.

Two other challenges for automated document matching are:

- **Persistently broad variability in how suppliers submit invoices.**
- **Fundamental rigidity in optical character recognition (OCR) and related technologies.**

While it's increasingly rare to hear of paper invoices arriving via post, pure eInvoicing via Supplier Networks — as opposed to digital submission of PDF or other invoice formats — has not exactly taken up the slack.

Optical character recognition (OCR) technology was supposed to provide a critical transition from scanned PDF (basically an image) to structured data — digitized, formatted, validated, manipulatable information that can flow seamlessly into both front-end procurement and back-end financial accounting information systems.



But even as the character-recognition portion of OCR technology has improved dramatically over time, it still relies on template-based approaches and rigid rules for identifying, structuring, validating, and sending important bits of information on to dependent procurement and accounting applications.



And, once again, the monster of interoperability rears its ugly head. Super large enterprises with sufficient buying power might get away with demanding strict digital invoice formatting from all or most of their active suppliers. But, even if it were practical or possible for most companies to force hundreds, sometimes thousands, of suppliers to adopt strict standards for formatting or tagging PDF-based invoices, one simple template change or omission forces a human intervention. And each forced human intervention **erodes the cost/efficiency benefits of automating AP processes** in the first place (not to mention the potential it creates for introducing errors and damaging supplier relationships via cost shifting).

All this historical context is important because it underscores the immense challenges of effectively automating AP, a core and ubiquitous business process that

- Cuts across traditional functional silos
- Demands significant cooperation to achieve interoperability, integration, and strategic usability of information across and among large numbers of independent entities with widely varying resource levels, digital capabilities, and objectives (buying companies, functional departments within buying companies, suppliers, financing/payment, and other service providers).
- Demands high levels of flexibility and configurability to accommodate a wide variety of proprietary internal processes, organizational structures, financial control/compliance

requirements, and status-quo performance levels.

No business enterprise should be forced to change or reengineer critical, core business processes in order to adopt a particular automation technology (although, in many cases, business-process reengineering is certainly indicated).

The good news: AI is now being applied, commercialized, and scaled in ways that finally address many of these long-standing challenges with AP automation. In the next section, we'll dig into how AI-powered AP automation solutions are well positioned to address the persistent:

- Interoperability gaps
- High percentages of non-PO transactions
- PO-to-invoice data gaps
- Challenges extracting/structuring invoice data for useful analytics, reporting, performance, and compliance measurement.
- Variability in suppliers' digital capabilities and transactional preferences (i.e., document capture must address paper, email, supplier portal, XML, EDI, etc, while payment aspects must be able to handle ACH, p-card, wire transfer, emerging Fintech, etc).
- Variability in AP processes/internal control/compliance requirements.
- Taxonomy/usability challenges (difficulties organizing digitized AP docs and data for easy search/retrieval).

The Path to AI-Led AP Automation

The immense value that AI brings to AP automation is its ability to recognize and turn 100% **unstructured or semi-structured** content either from documents or images into structured, usable data.

In its unstructured or semi-structured state, data can appear...

- Within any type of communication (a scanned letter, email, text message, etc)
- Within any type of document (word processing, electronic spreadsheet, PDF/image, invoice, contract, etc)
- At any location within a communication or document
- With any naming/labeling, formatting, and tagging conventions added by the sender.

...and still be consistently and accurately recognized, isolated, digitized, named, validated, converted (as needed), formatted, and added automatically to receiving or dependent information applications.

Legacy OCR tools failed to drive AP efficiency, owing mainly to lower-data extraction accuracy and template-driven approaches. So-called intelligent OCR tools added python code to OCR engines, but have delivered only slightly better (+5–10%) data-extraction accuracy and still require significant levels of human intervention due to template-driven approaches.

Over the last five years, **Intelligent Document Processing (IDP)** solutions have emerged, adding both pre- and post-processing stages for data extraction using OCR engines. In the pre-extraction phase, an original document might be cleaned up (cropped, noise reduced, etc) after which a combination of computer vision/OCR would work to identify and capture potentially relevant bits of data. A text mining/machine learning engine then indexes, classifies, and extracts or digitizes the information.

Some parts of invoice documents are

much easier for NLP/machine learning models to decipher and manage than others. A supplier's logo and address, for example, would be expected in such documents and fairly easy to recognize. But, even a supplier's name might present complications. Perhaps the invoice uses an abbreviation or acronym to name the supplier company, while the receiving company's vendor master data file references the supplier's complete legal name. Ideally, each common variation of the supplier's name will be captured and connected during initial training of the machine-learning model (using a massive external data source such as DUNS or similar). Less common variations, even typos or errors might, meantime, be flagged for human review from which the model continues to learn and adapt, driving, at least theoretically, to a point in time where the model no longer needs human assistance.

IDP is a template-agnostic approach to data extraction and processing that leverages various AI capabilities, including:

- Computer vision: sees or reads original communications and any attached documents
- Natural language processing: identifies/isolates/indexes potentially relevant bits of information and business data
- Machine learning (ML): applies statistical probabilities to correctly classify, enrich, correct, convert, and validate information before mapping and sending it along to desired/structured data fields being populated in receiving AP/accounting/finance or procurement applications

In cases where the machine-learning model fails to meet a certain threshold of assurance (for example a less than 95% probability of being correct), it would call for a human intervention based on which the model would continue to learn and adjust over time.

OCR alone relies on source documents to be already structured based on rigid templates. IDP applies machine-learning technology to convert and normalize various document structures so that OCR can then be applied to accurately digitize and extract relevant information.

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It's important to emphasize that, while IDP solutions are template-agnostic in nature, they are not tailor-made for automating end-to-end AP processes (Figure 2). IDP solutions generally have high total costs of ownership (TCO) and high AI/ML model training requirements. While IDP solutions do improve data-extraction accuracy, their scope of automation is generally limited to processing invoices within end-to-end AP processes.

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AI-led AP automation takes it all a giant step further, obviating the need for rigid document formats and templates altogether. AI-led and process-centric AP Automation solutions aim to deliver template-agnostic straight-through processing (STP) that adapts easily to changing document layouts, has lower AI/ML training requirements, and addresses larger chunks of end-to-end AP workflows.

Figure 2 – Evolution of AP automation tools

OCR tools		
Legacy technology, data extraction accuracy is low	No intelligence, just a means to digitization	Templatized approach
Intelligent OCR		
Data extraction accuracy slightly better than OCR tools	Does not reduce the level of human intervention	Requires custom development
IDP solutions		
Template-agnostic approach; higher AI/ML training requirements.	Higher total cost of ownership (TCO)	Piecemeal approach, not tailor-made for AP processes.
Process-centric AP automation		
Higher STP rates and data extraction accuracy	Template-agnostic approach, lower AI/ML training requirements.	Easily adapts to new document layouts; lower TCO.

From People to AI-Powered Automation

Now, let us consider the simple example of a PO-based invoice arriving from a supplier in PDF (image) format attached to an email.

The invoice comes first to the inbox of a budget-owner who, through proper procurement channels, has hired the supplier to perform a service. Budget owner opens the invoice attachment, determines it's legit, and forwards along to a generic AP inbox for processing and payment.

Instead of a person minding the AP inbox, there is now an AI-powered bot fulfilling that role. The bot scans the email message and determines immediately, based on the language, that there is an invoice document attached.

First, the bot might need to perform a number of technical pre-processing tasks to ensure machine readability of the attached invoice. That might include cropping, reorienting, or removing digital "noise" introduced when a person on the supplier's end originally scanned or saved down the document.

Next, a computer vision/OCR engine would read and capture all the relevant bits of information, feeding it to a deep machine-learning model for indexing and classification. Subsequent post-extraction tasks, also powered by natural language processing (NLP) and/or machine-learning (ML) technologies, perform a variety of tasks such as:

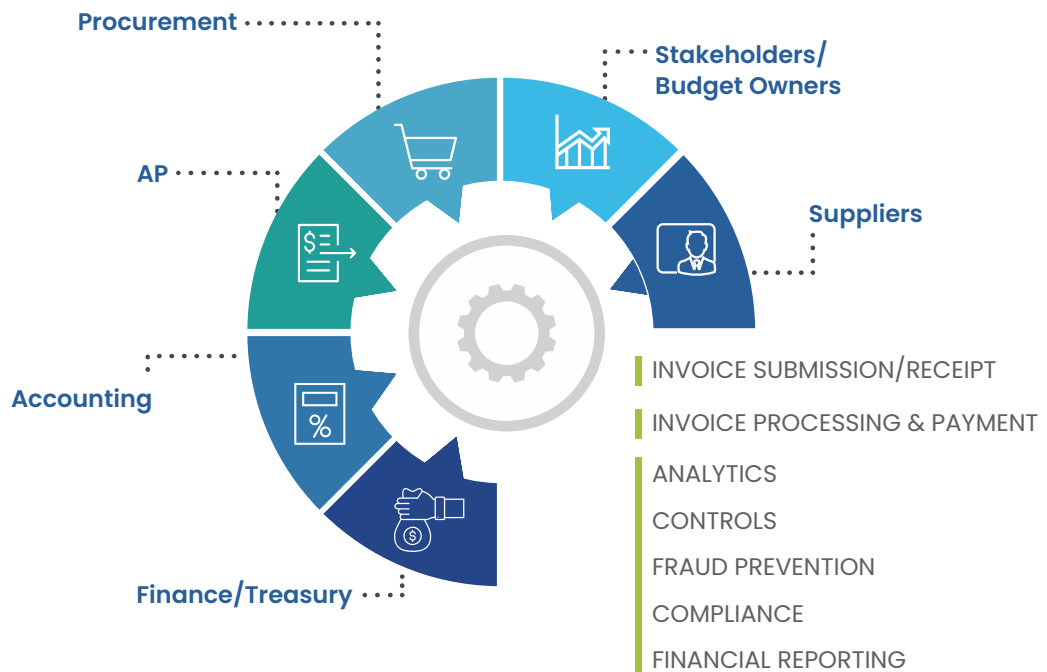
- Validating information/formats
- Converting/normalizing units, lot sizes, currencies, and so forth
- Enriching or filling in missing bits of information to complete records
- Assigning standard or propriety codes needed for mapping and moving relevant data into various downstream taxonomies and applications.

Certain bits of the now-structured data can be simultaneously sent along to:

- An invoice-PO or other n-way document-matching application for internal audit and spend-policy compliance tracking.
- An ERP or financial accounting system that needs the information mapped to a propriety cost-accounting and budget management code structure.
- A procurement application for spend analysis, which needs the same information mapped to a standard item taxonomy or code structure.
- A supplier performance management application that needs to know (via contract or receiving system lookup) if items being invoiced were delivered on time, in specified quantities, at acceptable levels of quality, at agreed/negotiated prices, and so forth.
- An internal cash- or AP-performance management system that ensures negotiated discounts for hitting certain order volumes, early or on-time payment targets, and so forth are being consistently realized.

Importance of Taking a Process-Centric Approach to AP Automation

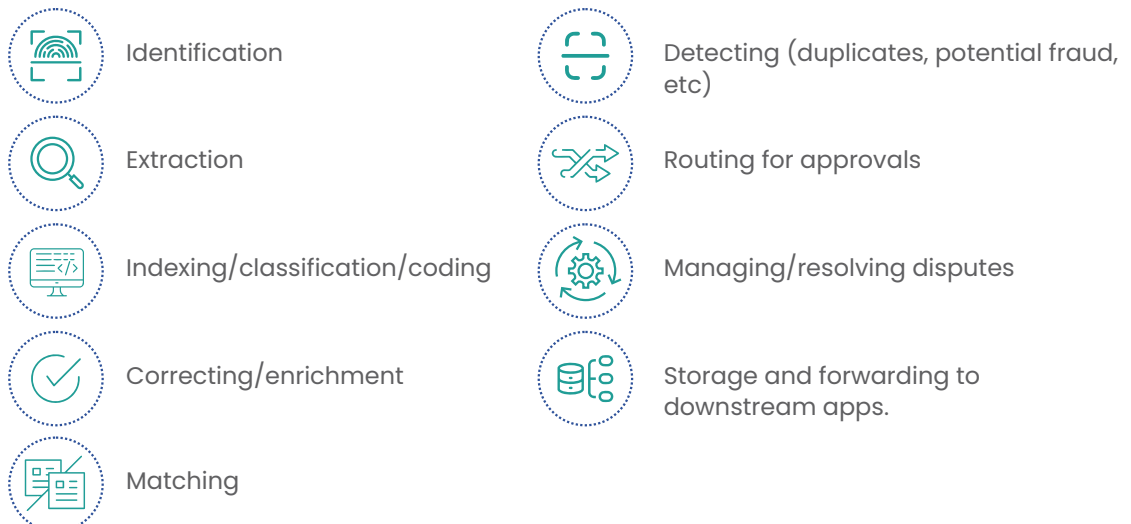
AP efficiency and effectiveness affects many stakeholders, so it's important to take an end-to-end, process-centric approach when deciding which pieces to digitize and automate (also, why, when, and how).



At the front end, there appear to be plenty of remaining opportunities for digitizing and automating how invoice documents get submitted and received into an organization. Half (50%) of companies participating in IOFM's 2022 AP performance benchmarking study say they have essentially automated invoice receiving, which typically means either:

- PDF, JPG, PNG (image files) or other types of digital records (XML, CSV, etc) arriving via email, FTP upload, Dropbox, Sharefile, Sharepoint, or other type of cloud/shared networking options, OR
- eInvoice records, typically "flipped" from POs or created within third-party Supplier Network applications.

Next come the data **digitization** and **processing** pieces, which are arguably the most complex to automate and where most practical AI applications are currently focused as they cover data:





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IOFM's 2022 benchmarking study finds 53% of companies claiming to have automated data capture (digitization), but there seems to be a broad range of what that actually means, extending all the way from simple OCR, to so-called “smart” OCR (with some front-end machine learning applied), to AI-Powered Intelligent Document Processing as discussed in the prior section.

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Adding real, automated intelligence to the front end — that is, to the **digitization** piece — makes it eminently easier and more possible to automate further downstream processing pieces such as:

- Complex (n-way) document matching
- Routing high-value or non-PO invoices through mandated approval workflows (as dictated by financial-control policies)
- Detecting invoice fraud, managing errors and disputes.

Beyond simply matching invoices to corresponding POs (based on PO number or other header-only information), companies are already using AI-powered intelligent n-way matching and authentication/validation capabilities to determine, for instance, if:

- Quantity billed is less than or equal to quantity ordered
- Invoice price is less than or equal to price specified in the PO
- Quantity billed is less than or equal to quantity received
- Supplier banking details match details in vendor master record.

Where non-PO invoices are concerned, companies are also deploying AI technologies to automatically:

- Assign the correct item/cost-center accounting codes (to a budget line-item level)
- Route invoices through required approval workflows.

New Horizons for Financial Control and Fraud Detection

Another great opportunity is in AI-powered fraud detection — for instance, auto-flagging invoices that

- Consistently sum to just under key expense-approval thresholds
- Contain unusual grammatical/spelling errors
- Deviate from suppliers' legal details
- Contain details (addresses, web sites, phone numbers, etc) that are invalid, nonfunctioning, residential, or otherwise high risk
- Contain line items that do not make logical sense (i.e., labor portion is too high relative to quantity or cost of goods).

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The possibilities for what a fraud-detection model might look for are virtually endless and this is a great example of where AI can easily surpass humans in its ability to detect patterns within massive data sets and/or to validate information acquired via training on massive external data sets. Companies often write off a certain amount of fraud because it is simply not worth the cost of dedicating human resources to detecting it. Applying AI is much more cost effective and can generate substantial savings in terms of fraud/error avoidance.

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All of these advanced AI-powered capabilities in invoice digitization and processing engender both higher rates of straight-through processing and lower rates of fraud, duplicate payments, and time spent on manual information lookup, error correction, routing, and invoice dispute resolutions with suppliers.

Next comes the payments piece, which we will touch on only briefly as it stands outside the primary scope of this paper. According to IOFM, 49% of companies claim to have largely automated invoice payments to suppliers, although it seems the term “automation” is often being conflated with “digitization” or “doing something electronically” in releasing

payments via ACH, wire transfer, or newer fintech options such as Paypal, Zelle, Venmo, etc, versus cutting and mailing paper checks. Truly automated payment occurs when a system for straight-through processing of invoices becomes trustworthy enough that no human steps in even to authorize the release of payments to suppliers.

Finally, AI-led AP Automation — the automated and intelligent conversion of semi-structured and unstructured to structured AP data — sets the stage for other automation opportunities even further downstream. Once AP data is sufficiently structured, it can also be automatically:

- Aggregated — for activities such as spend analysis, spend-policy compliance tracking and reporting, required financial reporting, and so forth.
- Manipulated/analyzed by finance/treasury organizations for cash-management and other business-performance improvement opportunities.

Building a Business Case for AI-led AP Automation

So, is your AP function a good candidate for AI-led process automation in general and invoice-process automation (APIA) in particular?

From a 30,000-ft level, your organization is likely to benefit from investment in AP process and/or invoice-process automation if it:

- Handles a relatively HIGH volume of invoices in each significant period (week, month, quarter, year). One simple rule of thumb to justify investing in a premium AI-led AP automation solution is processing 200,000 or more invoices per year. With that said, there are plenty of companies below that threshold that have other motivations for investing in AI-led AP automation (see below).

- Has a relatively LOW volume of invoices per full-time equivalent employee in AP. According to the IOFP, among companies with 20 or more FTEs in accounts payable, one in five (20%) process fewer than 100K invoices each year, compared to 47% in the 100K-1 million invoice range and 32% handling more than one million invoices each year. If one-third of companies with the same size AP organization as you can process 10X more invoices each year, it is likely that you have significant process-efficiency bottlenecks that can be addressed with AI-led AP automation.

- Has relatively LONG invoice-to-payment cycle times. While a company might choose to pay invoices in 30, 60, or 90 days for cash management reasons (and because they have sufficient buying clout to dictate those terms), it is, in fact, possible with today's state-of-the-art AI-led tools to reduce actual processing speeds from weeks or days down to just hours or even minutes. If your unit of measure for invoice-processing speed is still expressed in days, weeks, or months, you are already somewhat behind the curve and are likely a good candidate for AP process automation.

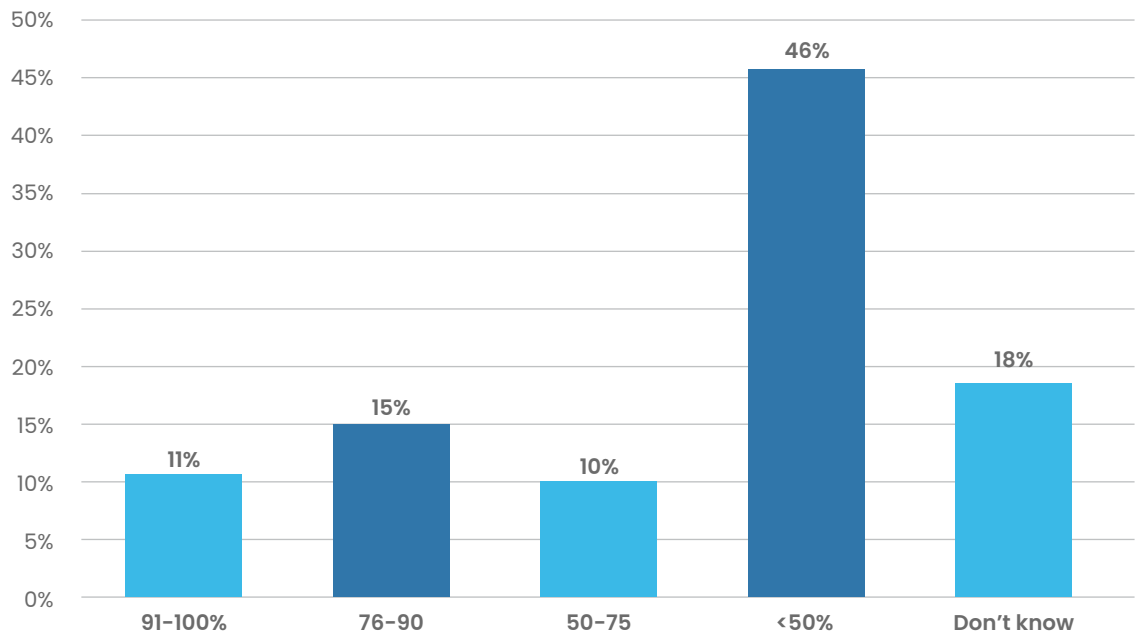
- Has a relatively LOW percentage of invoices with straight-through processing (STP). The chart below depicts 2022 benchmarking stats from the IOFM showing how companies sort out in terms of invoice straight-through processing, which, it describes as, "one of the best efficiency measures" for AP organizations.

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If you are already one the companies falling into a top-two category on this metric (that is, you already process 76% or more of invoices straight-through), then you might have trouble making a case for additional investment in AP automation. If you fall into either of the lower two categories (or don't track the metric at all), you have some catching up to do if you care about attaining best-in-class performance levels.

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Figure 3 – Percentage of Invoices with Straight-Through Processing



SOURCE: IOFM, 2022 BENCHMARKING REPORTS, ACCOUNTS PAYABLE PERFORMANCE

- **Has relatively LOW percentages of invoices paid on time.** Paying invoices late (outside of supplier-specified or strategically-targeted terms) is typically a function of bottlenecks in invoice validation, approval, and/or document-matching workflows, so may signify that additional (or better) automation solutions could benefit these areas.
- **Has a relatively HIGH percentage of non-PO invoices.** As noted earlier in this paper, nearly half of companies (48%) still have fewer than half of all supplier invoices tied to POs, and 73% report at least 25% of invoices being non-PO controlled. Rules/template-based AP automation solutions do not typically cope well with non-PO invoices as the documents often lack key information typically contained in POs such as proprietary cost-center and product/item codes. A good AI-led AP automation solution will have in-built capabilities and machine-learning to intelligently predict these missing data, significantly raising the possibility that a non-PO invoice can be processed

hands free or with minimal human intervention.

- **Has relatively HIGH error/error correction, duplicate payment, or invoice fraud rates.** These are not typically high percentages in most companies, so may be insufficient as sole reasons for investing in AP automation. However, taken in context with other metrics and circumstances discussed in this section, they can be considered good business-case strengtheners.

Of course, to understand where you sit relatively on these and other AP performance metrics, you need consistent, year-over-year access to reliable industry benchmarking data. [IOFM](#) is one organization that consistently provides such data to its members. Another is [APQC](#) (the American Productivity & Quality Center).

Beyond common AP performance metrics, there are several more qualitative factors that can make or strengthen a business case for investing in AI-powered AP automation.

- **AP organization spans or covers multiple countries and/or major geographic regions — multiple languages, regulatory structures, tax codes, etc.** Let's say, for example, that you have business operations located in the U.S. and Mexico. Now, Mexican regulatory authorities are changing information requirements for what qualifies as a legally valid invoice. Leading global providers of state-of-the-art AP automation technology will have experts on staff, following and interpreting key tax and regulatory changes in various countries/regions and incorporating them automatically into existing machine-learning models. This is also a key area in which AI-led AP automation shines versus the more rigid, template-driven OCR tools (discussed earlier) as it is far more flexible in coping with any changes as they occur over time.
- **Faces labor/workforce-related challenges.** While it's common to find ROI calculators that focus on the potential in process automation for workforce (FTE) reduction, such models are often overly simplified. Indeed, it is fairly rare to hear of a company that successfully deploys a process automation technology, then turns around and eliminates a bunch of FTE positions. Much more common on the labor front, is to explore how automation can:
 - ◆ Address ongoing and expected workforce attrition (turnover, retirements, inability to quickly and easily fill open positions).
 - ◆ Enable training, development, upskilling, and redeployment of existing FTEs to higher-value work — such as working-capital optimization, etc.
 - ◆ Assist with employee retention by equipping FTEs with easy-to-use, state-of-the-art digital tools that make their work easier and less tedious.
- **Has converted recently to a more distributed work model (work-from-home or hybrid).** Let's say, for example, that, despite your best efforts to digitize and automate invoicing from suppliers, you still have 25% of invoices arriving on paper via post because the suppliers are either unable or unwilling to comply with your formatting/templating requirements. Back when everyone was working in the office, that wasn't a big deal. Someone could easily open the envelopes, scan, and feed the docs to an OCR engine or OCR with machine learning for digitization. Now, most of your team works remotely on most days. You try designating a couple of people to continue this small manual portion of invoice processing, so someone now needs to pack up batches of invoices, send them off to remote workers, who also need to be individually provisioned with high-quality scanners in addition to other IT hardware needs. Even then, they might run into problems due to low bandwidth/slow network speeds. And, you have gained significant new risks and tasks around managing physical document security and compliance with any document retention/disposal requirements you might have in place. **With AI-led AP automation, you would be much better positioned to convert the remaining 25% of supplier invoices to digital submission as there would be no particular demands on how they need to format, tag, and submit invoices for processing by your teams.**

■ **Endeavors to be capable of more strategic and proactive approaches to cash management; discount capture; strategic spend, sourcing, and procurement management; supplier performance and relationship management, etc.** As solutions for automating low-value AP tasks (scanning, indexing, categorizing, coding, matching, routing, releasing, etc) continue to improve and become easier to deploy and use, it will become increasingly difficult to justify paying humans to complete these tasks. But there will always be opportunities to redeploy people in ways that contribute actively to the competitive performance of your business enterprise. For example, being better than your competition at minimizing suppliers' costs of transacting business, paying suppliers on-time, and ensuring suppliers have the cash flow they need to thrive, encourages those suppliers to invest in innovation and capacity to serve your business. It also helps to

ensure you receive better treatment when supply markets become constrained.

Organizational priorities matter too. If, on the one hand, your business consistently ranks fourth or fifth in terms of market share compared to its competitors, you might have a tough time competing for automation investment resources against product engineering/development, sales and marketing, or customer-service organizations that are better positioned to move the market-share needle in the right direction.

If, on the other hand, your company is a market leader that has been experiencing difficulties delivering finished products due to supply-chain disruptions, you can likely plead a strong case for AI-led AP automation that focuses on driving on-time payment performance, reduces transaction-processing cost burdens on suppliers, and so forth, as a means for obtaining higher-priority treatment.





Digital “readiness” is another key factor to consider in building a business case for AI-led AP automation. A company that is 5–7 years into an enterprise-wide digitization initiative, with clear C-suite sponsorship, a well-established Automation Center of Excellence, and several AI-led automation use cases under its belt, may be actively looking for new opportunities to which it can apply the infracture and know-how it has already built across IT, internal communications, HR, and other functions that handle much of the planning, execution, and change management that goes along with each new automation initiative.



If your company lacks experience with automating simpler processes or subprocesses that occur entirely within discrete corporate functions, it might not be the best idea to start with a strategically critical process, such as procure-to-pay, that spans multiple functions and requires high levels of cooperation across different corporate power centers that might also be misaligned in terms of goals, strategies, and tactics.

Any business case for AI-led AP automation also needs to be fully cognizant of priorities and initiatives underway in adjacent functions. Let’s say, for example, that enterprise procurement is aggressively pursuing a major strategy of supply-base rationalization or optimization (i.e., reducing the total number of suppliers and concentrating more business with the highest performers). A business case for AP automation built on total invoice volume or invoices per FTE could fail to deliver if procurement’s strategy leads, in the same timeframe, to drastically reduced numbers of suppliers, billing less frequently, for

larger volumes of goods and services.

Key takeaways for CFOs and other finance leaders include:

- Benchmark current performance on key AP metrics vs. industry best in class.
- Evaluate digital “readiness” both internally and externally among your supply base.
- Collaborate/coordinate priorities with peers in adjacent functions.
- Draw clear connections between AP performance metrics (such as days payable outstanding/DPO) and top-line business metrics (such as working capital performance).

Preparing Your AP Organization for AI-Led Automation

Before practical AI came on scene, AP automation initiatives typically involved a significant amount of preparation and pre-work, for example:

- Cleaning up and enriching vendor master data.
- Adopting standard templates and formats.
- Communicating with both internal stakeholders and suppliers, and guiding them through the change process with communications, training, compliance tracking/reporting, etc.

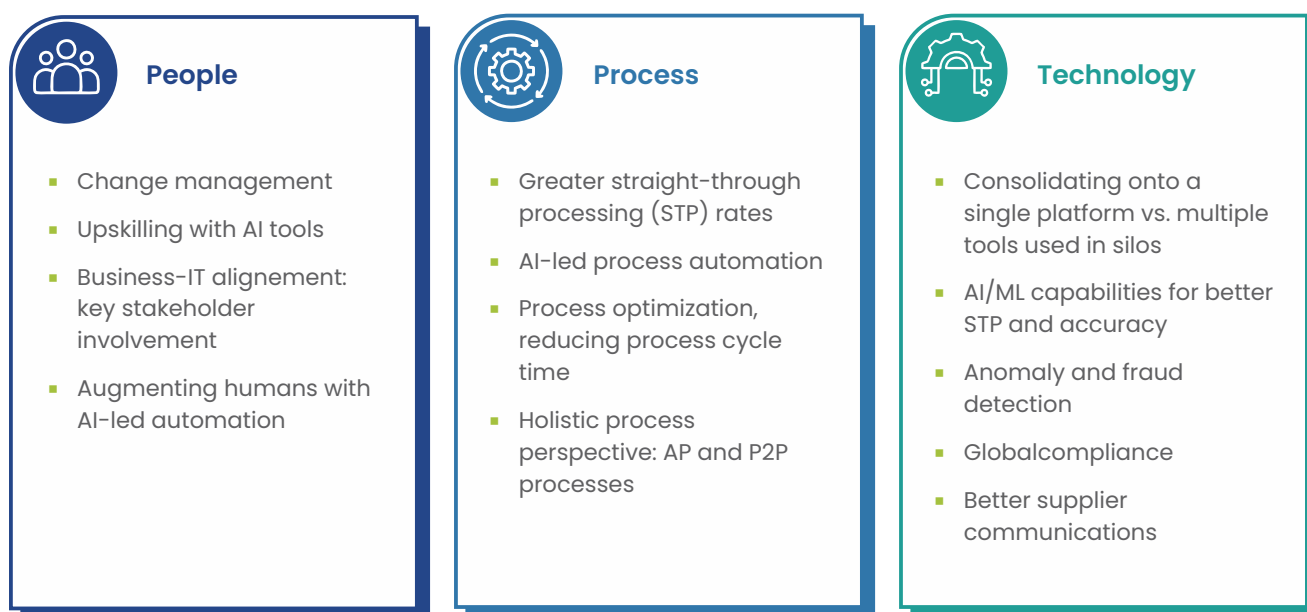
AI-led AP automation is different. Once you decide to fully automate invoice processing, you can be up and running with a state-of-the-art AI-led AP automation solution within a few weeks. And, while some effort might be required to teach a solution about your specific

organization and new invoice layouts, you can expect that effort to diminish steadily as the solution powered by machine learning continues to evolve and build its knowledge base.

Meanwhile, the work of AI-led AP automation is essentially invisible to budget owners forwarding invoices to AP and to suppliers submitting invoices directly, significantly narrowing the need for change management. And because AI-led AP automation solutions are typically delivered via the cloud (versus on-premises installations), they also demand negligible resources and support from internal IT teams.

With that said, there are a number of things to address — in terms of people, process, and technology — to prepare your organization for a transition to AI-led AP automation.

Figure 4 – Key pillars for AP transformation



SOURCE: ZYCUS

People: Plan Ahead for Reskilling/Upskilling



Time and motion studies conducted by Zycus suggest that AI has the potential to liberate up to 60% of time currently expended on low-value work in Accounts Payable.



Real customer use cases show this can happen very quickly, leaving too many people chasing too little work. So, it's important to proceed deliberately and to make realistic predictions and plans around:

- How many human work hours are likely to be freed up
- Whether or not existing personnel can be readily redeployed to higher-value tasks and roles or need training/upskilling
- What kinds of training/development/reskilling/mentoring might be needed
- How goals, objectives, and performance metrics may need to change.

You also need to identify people capable of leading and championing AP automation initiatives.



There is a significant gap between the culture and language of AP and the culture and language of technology-powered process automation and Artificial Intelligence. If you are fortunate enough to be operating in an organization that has invested in building an Automation Center of Excellence (CoE) or similar organization, you won't need to worry so much about this gap.



But, if your company does not have such a team in place to assist, you will want to:

- Map skills, capabilities, and attitudes required for successfully implementing and extracting full value from AI-powered automation technologies.
- Identify within current teams' people most likely and willing to spearhead and champion process automation initiatives (i.e., people who are essentially tech-savvy, have an interest in AI, generally embrace change, typically look for opportunities to be more efficient and productive in their work, etc), OR
- Fill open positions/pursue new hires

with the above characteristics in mind.

You don't need software engineers or data scientists, but you will want a small core group of people with basic knowledge, skills, and capabilities around:

- Evaluating data management tools and solutions
- Data architecture (collection, structure, query, and analysis)
- Educating/selling ideas/communicating with data
- Monitoring/observing/ensuring data quality
- Visualizing/converting data to actionable insights.

Process: Evaluate Legacy Processes and Information Systems

The good news about AI-led AP automation solutions is that they eliminate the need for you (or anyone else) to reengineer internal business processes or to adopt any standard communication channels, templates, document types/formats, taxonomies, item/part numbering systems, account-coding systems, and so forth. Nonetheless, AI-powered automation initiatives will present excellent opportunities to:

- **Map out existing processes and process/data dependencies comprehensively (from end to end) and in detail, questioning:**
 - Why do we do these process steps?
 - Why did we start doing these process steps?
 - And, after we implement this AI/automation solution, will there still be good reasons to continue these process steps?
 - Why do we collect and store this piece of data?
 - Do we legally need to retain this piece of data?
 - If not, do we use the data effectively in downstream applications?
 - If not, are there opportunities for us to use the data in downstream applications now that we are going to have it captured and well structured?
 - If yes, what is the potential business value of having this data? And,
 - Does the potential value outweigh the cost/effort of maintaining it?
 - Who needs access to it?
 - Is the data at an appropriate level of granularity for all the ways we might want to use it (slicing/dicing/analyzing/reporting)?
 - What kinds of metrics or reporting should contain this data and what will it take to easily and efficiently generate those metrics/reporting?
 - Is there data we would like to have, but could never obtain before because it was too difficult to access from unstructured sources?
 - What business outcomes/metrics do we hope to affect by having/tracking/analyzing/visualizing this piece of data or data set?
 - Can it make us more efficient, effective, productive?
 - Are there ways we might use this data to become better, faster, smarter than our competitors?
 - Can it help us to improve/support our relationships with suppliers?
 - Can it improve the value we deliver to customers, stockholders?

Technology: Choosing the Best Starting Point for AI-Led AP Automation

Much of this white paper has focused on automating invoice capture/processing with the intent of automatically digitizing and structuring commercial data from AP transactions that can then be sent on to various downstream business applications both in accounting/finance/treasury and procurement. For many companies this is a logical starting point because it is a:

- Long-standing pain point for AP
- Nexus for tedious, manual, low-value work
- Relatively low-risk automation opportunity that does not demand significant change management outside of AP.

Here are four questions to help you decide if invoice capture/processing might be a good starting point for your AP organization:

- **Which AP tasks deliver the most negligible value but take the most time to complete?** (for example, monitoring AP inbox/files sharing sites, opening/reading messages and attached documents, manually picking/entering relevant data into downstream apps, manually looking up/validating/matching information, responding to supplier queries about payment status, etc)
- **Which AP tasks require the most manual data and validity checks?** (for example, n-way document matching, unit/quantity conversions, matching of supplier performance to contract terms)
- **What AP process bottlenecks/errors cause the most significant repercussions?** (for example, late, duplicate, fraudulent, and budget-busting payments)
- **Are there outsourced AP workstreams we might want to bring back in-house/regain control over using AI automation?**

Feasibility is another angle that needs consideration. For example:

- Will our dependent processes and downstream applications (procurement apps, ERP/accounting/finance apps) be capable, as is, of receiving, incorporating, and meaningfully utilizing our newly structured AP data?
- If not, how much work and investment will be needed to make that happen?

Consider a Time and Motion Study

As mentioned earlier, time and motion studies conducted by Zycus suggest that AI has the potential to **liberate up to 60% of time currently expended on low-value work in Accounts Payable**. But each company is unique in terms of its people, processes, and technology, so you might consider investing in a proprietary time and motion study to:

- Decide — with intent — which tasks and activities contribute the most to business competitiveness or other measures of success (high-value) and which contribute the least (low- or no value)
- Document how much time you currently devote to all the low- or no-value tasks.
- Identify which low- or no-value tasks can reasonably be automated with AI.

As part of such a study, you might use observers to video activities, effectively and efficiently capturing both motions and time signatures for later analysis. You might also train observers to ask questions carefully worded to preclude defensiveness or dishonesty among the employees being observed. So, for example:

- Instead of “Why did you spend all that time doing X, Y, or Z?” the observer might ask, “What about this process or system forced you to spend all this extra time doing X, Y, or Z?”

It is also vital to ensure you gain a clear understanding of motion frequencies. While your study might capture a person undertaking a complex workaround that consumes several hours, it could be that set of circumstances arises only once a year, at most. That data point needs to be treated as an outlier versus the norm, or your analysis will be skewed.

Once raw time and motion data is captured, there needs to be objective processing for classifying, sorting, plotting, and visualizing the information. Objectivity and sufficient granularity must be consciously built into the study.

Ultimately with time and motion studies, four things will determine success:

- Transparency
- Communication
- Objectivity
- A commitment to following results, even when they suggest fundamental policy or process changes may be warranted.

Plan to Manage Change Proactively

Some people embrace change, but many can be expected to fight it, even when it makes their jobs much easier. CFOs, accounting, finance, and other leaders looking to automate core AP processes need to look honestly at their organizations to determine:

- Who are the resisters?
- Who are the change agents?
- Who commands the most respect and influence?

If change agents are not also influential, they may struggle to bring resisters into the

fray. If that is the case, it might be necessary to look outside your organization either for new hires or experienced consultants who can spearhead major AP automation deployments.

While existing employees might be set in their ways — and comfortable resisting a major change — new employees (and younger ones) will be more easily influenced, especially when specific values are conveyed early and consistently —

- In job descriptions
- During interviews
- Through onboarding/orientation
- In training, development, and mentoring interactions with all new employees

Conclusion

Artificial Intelligence is poised to affect virtually every aspect of our personal and business lives. As an executive with responsibility for the Finance function and/or Accounts Payable processes, you can still decide to be a leading-edge, early adopter of AI-led AP automation.

Current and expected economic circumstances — slowing growth, tight labor markets with rising pressure on wages — alongside the fact that many C-suites are razor focused on digitization and automation — make now an ideal time to start exploring the state of the art in AI-led AP automation.

Practical AI for Accounts Payable automates the tedious, time-consuming, and labor-intensive tasks that require manual processing and frequent human intervention. It solves long-standing problems with systems integration and interoperability. And it offers the potential to bring so-called “Dark Data” — unstructured or semi-structured business data that is fragmented and trapped within countless docs and other sources — into the light where you can start using it to drive business performance improvement and to inform competitive business decision making.

AI eclipses human capabilities for certain tasks, such as detecting subtle patterns in massive data sets (invoice fraud, for example), instantly and accurately adding missing information, correcting bad information, and making data more meaningful by connecting it consistently to other related bits of information. Having evolved far beyond its predecessors, [AI can save an organization as much as 50%](#) of its current AP processing costs.

Traditional approaches (manual processing and OCR) fail to scale with increased invoice volume and document layout variations, and total cost of ownership (TCO) increases rapidly. Few contemporary business enterprises have an option of increasing AP FTEs to handle greater invoice volumes and variety. And template-based solutions do not fit-the-bill for variations in document layouts. Straight-through processing rates remain stubbornly low and there is greater need for manual intervention.

Leaders of AP automation initiatives must understand that for AP transformation to succeed, they need to cultivate synergies among people, process, and technology aspects. Use of AI and machine learning is for augmenting humans and enabling organizations to do more with less.

Now is the time to put incremental improvements on hold and modernize your accounts payable process from end-to-end with AI-led AP automation. Laggards that fail to seize this opportunity to drive strategic change in the AP function will miss out on good opportunities for cost efficiency, gaining competitive advantage, and scaling for growth. It is less a matter of if one should pursue AI-led AP automation, but rather how soon such a transition can be achieved to drive AP efficiency and digital transformation of the enterprise finance function.

Zycus AP Automation Solution

The Zycus AP Automation Solution targets holistic AP transformation and leverages the AI/machine learning capabilities of the Zycus Merlin AI platform. Key features and capabilities of the Zycus AI-led AP Automation Solution include



Time and cost savings: A template-free approach that delivers improved rates of straight-through processing with high accuracy and relatively low total costs of ownership (TCO)



Better supplier communications: Automated email review and reply via AP Smart Desk that improves supplier satisfaction and strengthens buyer-supplier relationships with faster response times and no missed emails



Anomaly and fraud detection: Identification of potential fraud cases (duplicate invoice, phantom supplier, etc) plus safeguards against phishing and spoofing



Global compliance: Consistent and up-to-date support for compliance around invoice content, e-invoice, and tax regulations.

Figure 5 – Zycus AP Smart Desk

The screenshot displays the Zycus AP Smart Desk interface. On the left is a sidebar with navigation icons for Compose, My Emails, Sent Items, Drafts, Folders, B2B Emails, All Emails, and Spams. The main content area is titled 'AP smart desk' and shows a list of emails. One email from 'Smith John' is highlighted, showing a 'Process this invoices' action. The right pane shows the details of the selected email, including the email type, supplier, and a table of attached invoices.

File Name	Company Name	Invoice Number	Invoice Status	File Processing Status	Action
Invoice_1.xml	Harrington	1000	Auto draft success	Review	Review Draft & Submit
Invoice_A.pdf					Download
Invoice_2.xml	Harrington	2000	Auto draft success	Review	Review Draft & Submit
Invoice_B.pdf					Download

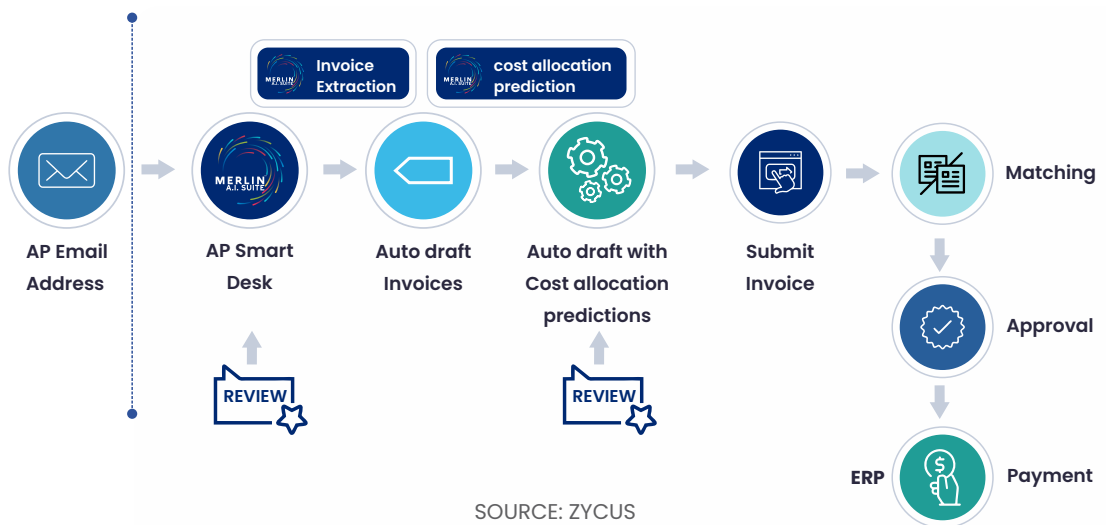
SOURCE: ZYCUS

Zycus AP Smart Desk connects to and manages your AP email inbox, automatically checking, processing, and simplifying response processes.

The solution automatically suggests relevant replies to supplier query emails, making life easier for the AP team. For emails containing invoices, the system automatically extracts and sends invoice documents to the Zycus eInvoice module, where it matches (two- or three-way) with POs extracted from eProcurement. After matching, the module sends supplier invoices through relevant approval workflows for on-time payment.

Zycus AP Smart Desk reduces AP resource requirements for processing supplier emails and improves supplier satisfaction with faster replies. With Zycus AP Smart Desk, enterprises can achieve savings of approximately \$2.70 per email.

Figure 6 – End-to-end AP Automation using the Zycus Merlin AI platform

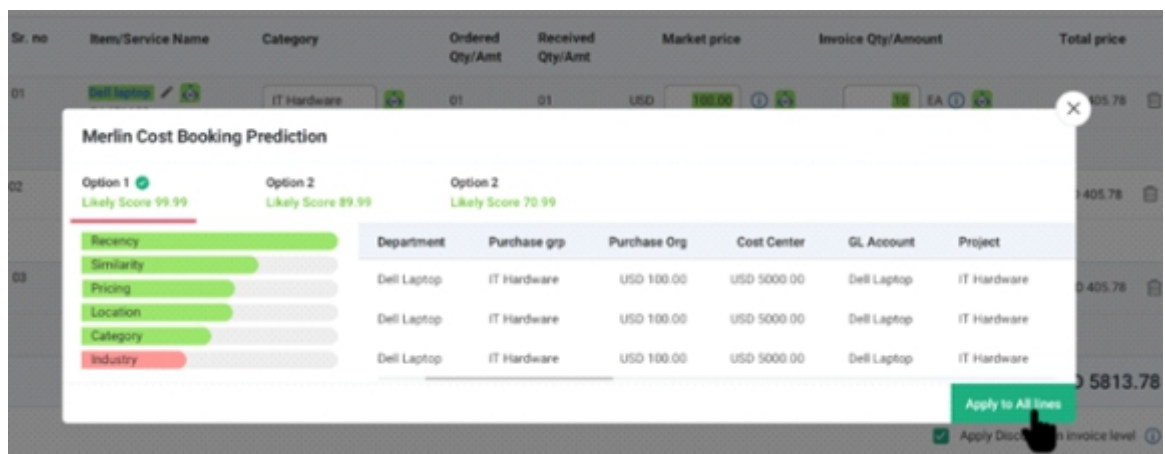


SOURCE: ZYCUS

Zycus Invoice Extraction uses Merlin AI to automatically extract and structure invoice data. It reduces costly manual effort, increases AP team productivity, and accelerates average invoice processing speed by over 50%.

In a manual or partially-automated invoice processing systems (using OCR tools), AP team members typically spend loads of time looking up and adding cost-booking information to individual PO/invoice line items, especially for non-PO invoices. Zycus Cost Allocation Prediction takes over this process, automatically predicting, with confidence scores, the correct cost-booking information at a line-item level. Auto training cuts time and effort needed for invoice coding, improves AP team efficiency, and accelerates invoice review and processing.

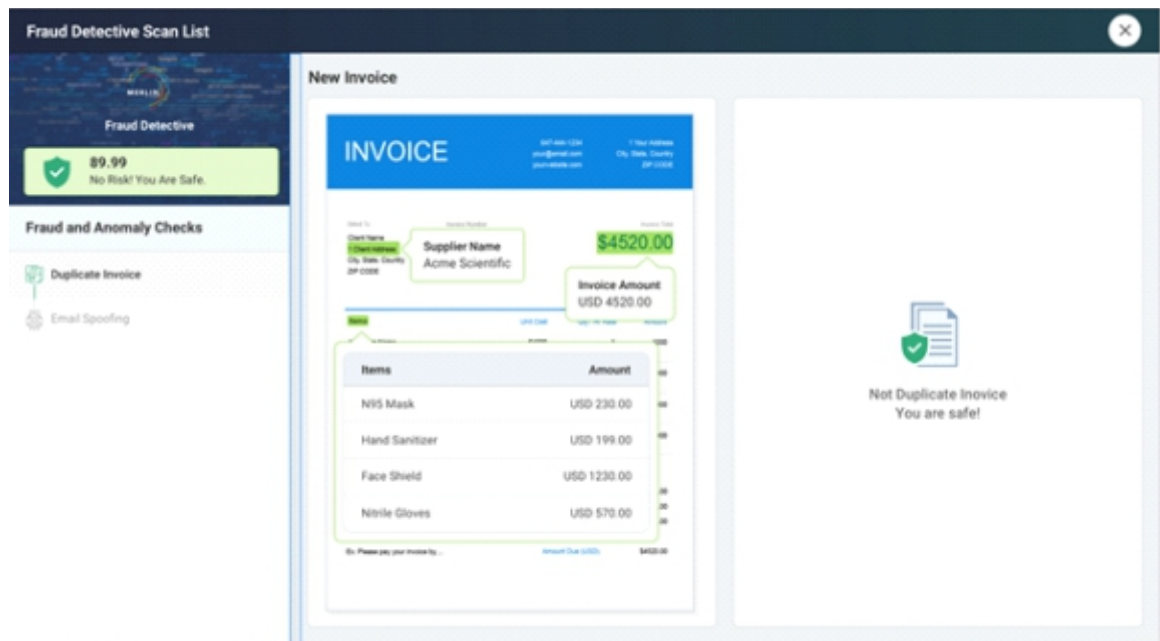
Figure 7 – Cost booking prediction using Merlin AI



SOURCE: ZYCUS

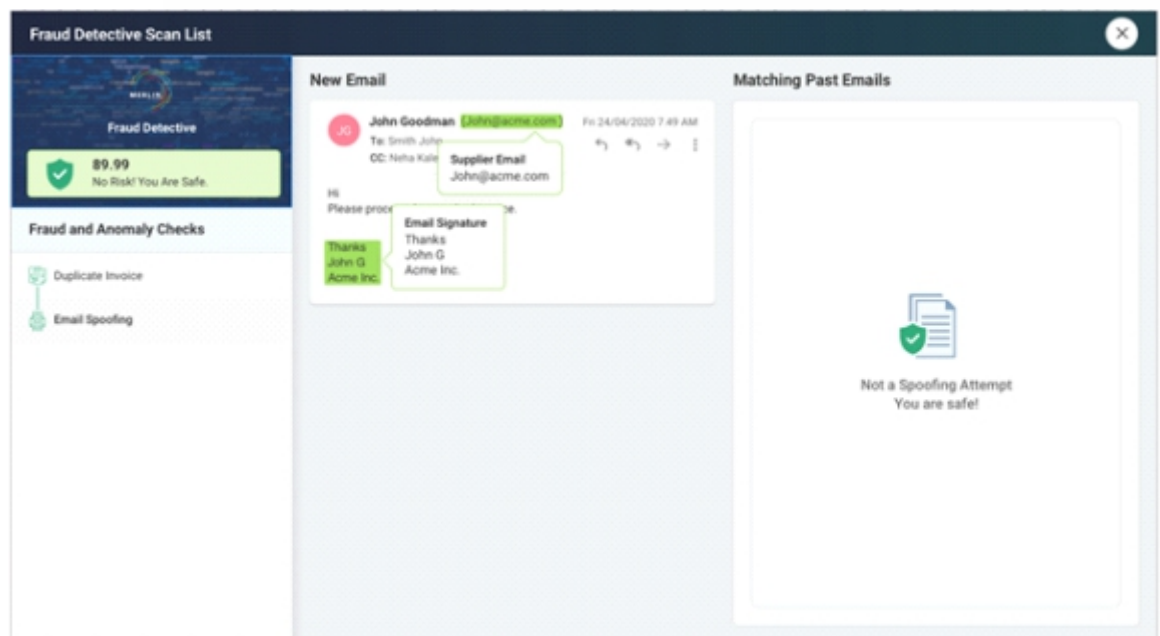
In terms of **anomaly and fraud detection**, the Zycus AP Automation Solution enables consistent identification of potential fraud cases (for example, duplicate invoices, phantom suppliers) and safeguards against phishing and spoofing.

Figure 8 – Fraud detection using Merlin AI



SOURCE: ZYCUS

Figure 9 – Anomaly detection using Merlin AI



SOURCE: ZYCUS

Traditional OCR solutions often return information that must be manually compared to original invoices and tweaked. The activity is time-consuming and may be even more laborious than 100% manual processing.

An advanced AI-led solution, Zycus [AP Smart Desk](#) handles both PO and non-PO invoices and, compared to non-AI solutions, offers greater accuracy in extracting both header and line-item invoice data. This leads to more straight-through processing (STP) and fewer

manual interventions.

The global solution also offers dedicated features and capabilities to ensure local and regional compliance with relevant invoice content, e-invoice, and tax regulations.

The Zycus AP Automation Solution also provides support for **multiple languages** and delivers **significantly high field-level accuracy for headers and line items**, reducing the number of instances requiring human intervention.

About Zycus

Zycus is the pioneer in Cognitive Procurement software and has been a trusted partner of choice for large global enterprises for two decades. Zycus has been consistently recognized by Gartner, Forrester, and other analysts for its Source-to-Pay (S2P) integrated suite. Zycus powers its S2P software with the revolutionary Merlin AI Suite. Merlin AI takes over the tactical tasks and empowers procurement and AP professionals to focus on strategic projects; offers data-driven actionable insights for quicker and smarter decisions, and its conversational AI offers a consumer-grade user experience to the end users.



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Zycus helps enterprises drive real savings, reduce risks, and boost compliance, and its seamless, intuitive, and easy-to-use user interface ensures high adoption and value across the organization.

Start your #CognitiveProcurement journey with us, as you are #MeantforMore.

