



# 5 Ways Artificial Intelligence Transforms Invoice Data Capture

An AP & P2P white paper

ACCOUNTS PAYABLE & PROCURE-TO-PAY

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For some, the thought of artificial intelligence brings with it visions of self-driving vehicles, robot doctors that diagnose illness, or automated concierge services at posh urban hotels. The impact of artificial intelligence in invoice data capture may not be as worthy of a science fiction movie or a cover story in a glossy consumer magazine, but the results will be as transformative. Data capture solutions with artificial intelligence give the accounts payable departments that are bold enough to adopt the technology a way to finally rid themselves of the repetitive and menial manual tasks that have painted the profession as a tactical back-office function. While the idea of machines performing invoice data capture may concern some, accounts payable practitioners surveyed for the Institute of Finance and Management's (IOFM) "2018 Future of Accounts Payable Study" rank artificial intelligence among the most important technologies to the future of their profession over the next three years. This white paper provides a definition of artificial intelligence, details what finance departments want from the technology, describes how artificial intelligence works in data capture, and shows five transformative benefits the technology delivers to the invoice data capture process.

## What is Artificial Intelligence?

Artificial intelligence enables software or machines to understand tasks by producing for itself the rules programmers cannot specify. Artificial intelligence was especially developed for:

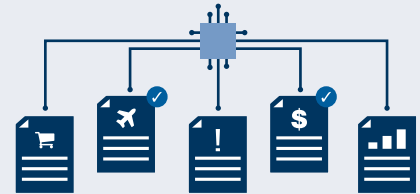
- Automating repetitive tasks
- Analyzing large amounts of data
- Identifying certain features in data
- Applying these features to new data

By analyzing data sets and patterns, artificial intelligence automates menial, time-consuming tasks such as invoice data capture and the matching of invoices to purchase orders and/or proof-of-delivery documents. The technology understands the tasks that must be performed for a business application.

Artificial intelligence also can mine information to provide contextual insights for decision-making and financial planning. For instance, the technology enables organizations to intelligently leverage data from millions of transactions stored in repositories or other systems to find invoice information.

What's more, artificial intelligence employs so-called machine learning to achieve better results over time. Machine learning uses sophisticated algorithms to eliminate the complex, rigid and time-consuming process of programming all the steps required to automate a business process such as invoice data capture. The technology can "train" itself to recognize documents (e.g. invoices) and to capture the necessary data based on their characteristics (such as extracting the invoice amount).

**54%** Fifty-four percent of businesses are making substantial investments in artificial intelligence, per PriceWaterhouseCoopers (PWC).



**THE ASSOCIATION OF CHARTERED CERTIFIED ACCOUNTANTS PREDICTS** that over the next two years, artificial intelligence will alleviate processes such as transaction coding and bookkeeping, freeing staff to focus on value-added activities such as turning accounts payable into a profit center.



**65%** of organizations predict that standardizing and automating processes and building agility and quality into processes are key to the future of finance, per Ernst & Young.



**MOST ORGANIZATIONS SAY THAT COMBINING STATE-OF-THE-ART TECHNOLOGY** with process improvement will be a major focus for the future finance function, Ernst & Young reports.

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## Artificial Intelligence in Invoice Data Capture

More finance departments are deploying or planning to deploy artificial intelligence to automate costly, error-prone and inefficient processes, while improving corporate decision-making and agility.

Invoice processing is one application for artificial intelligence that has finance executives especially excited. They see artificial intelligence as a means for streamlining the invoice data capture process.

Accounts payable professionals surveyed by IOFM spend 84 percent of their time bogged down by a seemingly endless list of manual and semi-automated invoice processes, including data capture.

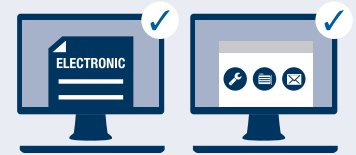
In most organizations, invoices can be received in paper or electronic format by anyone, anywhere in the enterprise, including a branch office, centralized mailroom, finance department or a purchaser. The invoices are then reviewed and forwarded (usually via inter-office mail) for approval and coding. Much of the invoice approval process resides in the heads of seasoned, trusted employees who can go on vacation, go on maternity leave, quit, or become sick, significantly delaying workflows. Any exceptions are chased through the organization. Once invoices are approved, invoice data is keyed into an enterprise resource planning (ERP) platform or other line of business system, and the invoice is scheduled for payment, and physically filed. Supplier inquiries and management and audit requests for reports and access to documents typically require manual document retrieval.

All this manual processing results in costly and error-prone keying of invoice information, lost or misplaced invoices, long approval and exception resolution cycles (which result in late fees and missed discounts), compliance and security risks, high paper storage and retrieval costs, delays uploading data on approved invoices to downstream systems, time-consuming supplier inquiries regarding invoice and payment status, and difficulty implementing operational best practices.

Invoice processing also consumes the time of accounts payable managers. Accounts payable managers spend a greater percentage of their time on transaction processing (36 percent) than on managing staff (34 percent), reviewing reports (21 percent) or planning (9 percent), IOFM reports.

As a result, accounts payable earned a dubious trifecta in an IOFM survey of controllers: it topped the lists as the most time-consuming, laborious, and paper-intensive finance and administration function, ahead of burdensome activities such as accounts receivable, payroll, tax, and audit and reporting. In fact, accounts payable received nearly twice as many votes from controllers as the most time- and labor-intensive finance and administration function than the next highest-ranked function.

**56%** of finance leaders surveyed for PwC's finance operations benchmarking study believe that improved technology will make finance processes more effective.



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### THE COST OF FINANCE OPERATIONS

at best-in-class organizations is **.48 percent** while median organizations spend **.91 percent** of revenue, PwC reports.

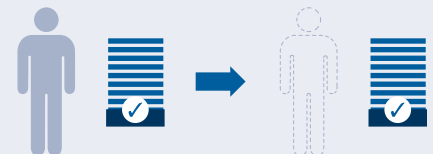
**REDUCING PROCESSING COSTS** and driving more value from data and internal and external collaboration are the top priorities of accounts payable leaders, Ardent Partners reports.



Inadequate accounts payable processes and systems result in **27 percent of time spent on waste** and activities that could be automated, per PriceWaterhouseCoopers (PwC) research.

### ONLY 47 PERCENT OF ACCOUNTS PAYABLE

**DEPARTMENTS** can process invoices straight-through where an invoice is approved without any human operator intervention per Ardent Partners.



**MORE THAN THREE-QUARTERS OF BUSINESSES** lack automated processes that fully optimize accounts payable, according to MasterCard's *Creating Payment Energy* report.

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## How Data Capture Solutions with Artificial Intelligence Work

Invoice data capture has evolved to leverage artificial intelligence.

Artificial intelligence streamlines invoice data capture in three ways:

- 1. Identifying patterns:** Data capture solutions that use artificial intelligence can identify patterns in a document to determine the location of important information, such as the invoice number, invoice amount and due date. Unlike other technologies that attempt to “read” the document, data capture solutions with artificial intelligence see clusters of tabular data for data extraction. Artificial intelligence also can help data capture solutions determine where information lies within a table. This enables the technology to quickly find and extract information, regardless of the size of the table or how many times it is repeated across pages.
- 2. Learning and applying:** Unlike other approaches to document processing, data capture solutions with artificial intelligence can classify different types of documents by reviewing a small subset of documents. Once the technology has determined the unique attributes of a document type, it can apply the classification rule to documents with variations such as the occurrence of words on a page, colors and spacing, and images on the document. Artificial intelligence also helps data capture solutions learn how to more accurately capture information based on historical and real-time data corrections and manual data entry. For instance, a data capture solution with artificial intelligence can learn and apply the context of information by identifying where staff locates the information required for data correction.
- 3. Understanding imperfections:** Artificial intelligence generalizes and applies what it learns from data corrections, so it can help a data capture solution provide optimum results when document formats change or information shifts on a page. Other approaches to document automation attempt to memorize corrections and the location of information on the page. Data capture solutions with artificial intelligence also can work directly with back-end systems and databases to recognize when information on an incoming document such as an invoice is misspelled or slightly changed. By comparing information extracted from incoming documents with data that resides in back-end systems, the artificial intelligence in a data capture solution can automatically match (or nearly match) invoices to purchase orders and shipping documents, validate invoice information, and populate missing data fields.



**ARTIFICIAL INTELLIGENCE HELPS BUSINESSES** make faster, better and more affordable decisions, PwC says.



Data capture solutions with artificial intelligence can determine where important information resides on an invoice or other accounts payable document.



**IMPROVED COMPETITIVE POSITION** is the reason that nine percent of financial services organizations use artificial intelligence, PwC reports.

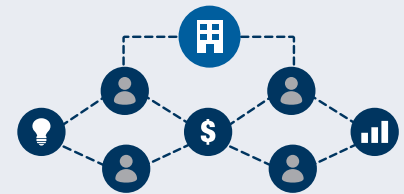
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## 5 Transformative Benefits in Invoice Data Capture

Artificial intelligence and data capture technology can transform invoice processing. Here are five ways that accounts payable benefits from data capture solutions that use artificial intelligence.

- 1. Significant labor savings:** Manually processing invoices results in high labor costs: mail opening and sorting, keying of invoice data and general ledger information, matching of invoices and purchase orders and/or proof-of-delivery documents, physically routing of invoices to approvers, responding to supplier inquiries, inputting of invoice information into a system of record, and paper storage and retrieval. Data capture solutions with artificial intelligence help keep staffing costs down by automatically classifying documents, extracting invoice data, matching invoices with purchase orders and/or proof-of-delivery documents, and posting and archiving approved invoices and data. Best-in-class organizations can reduce their invoice processing costs by 82 percent compared to peers, in large part, by eliminating manual processes with data capture automation, per Ardent Partners.
- 2. Increased staff productivity:** Seventy-three percent of finance leaders believe automation is improving their function's efficiency and giving employees more bandwidth for value-added tasks, per the Oxford Economics study "How Finance Leadership Pays Off," sponsored by SAP. Data capture solutions with artificial intelligence reduce menial, repetitive and time-consuming tasks such as invoice data-entry and invoice matching. With fewer workers needed for invoice data capture, accounts payable staff are freed to help analyze data on operational performance, working capital and corporate spending, and to help in budgeting, planning and forecasting. Their talents and expertise can be leveraged to benefit the organization in a more strategic capacity. Sixty-five percent of finance professionals would use the time saved from accounts payable automation to optimize business productivity, TechValidate finds. Accounts payable professionals would also focus more time on cash flow and business analysis (55 percent) and improving the financial close process and reporting (52 percent). Best-in-class finance organizations already spend 20 percent more time on data analysis than their peers, per PwC.
- 3. Faster invoice approval:** Data capture solutions with artificial intelligence streamline the most time-consuming steps of processing invoices, including invoice validation, invoice data capture, matching of invoices and purchase orders and/or proof-of-delivery receipts, and the upload of information on approved invoices to an ERP system. The technology eliminates time-consuming manual tasks and allows buyers to customize workflows to meet the specific needs of their business process. Data capture solutions with artificial intelligence free staff to focus on true exceptions and on more fulfilling and

**88%** of businesses predict that accounts payable processes will become largely automated within the next two or three years, Ardent Partners reports.



**39%** of accounts payable departments cite high invoice processing costs as their top challenge, Ardent Partners reports.



**39%** of accounts payable departments surveyed by Ardent Partners report that a high percentage of errors is their biggest challenge.

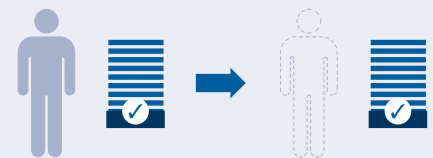
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valuable activities such as data analysis, working capital management, and budgeting, forecasting and planning. Data capture solutions with artificial intelligence also provide accounts payable departments with the ability to manage higher volumes (from growth or acquisition) without adding staff.

- 4. Fewer payment errors:** Manual invoice processes increase the chance of errors because of mis-keyed data, and no validation of data. The problem is compounded when invoice errors are detected late during the processing cycle. Detecting errors late in the processing cycle is big reason for delayed approvals, resulting in late-payment penalties and missed early-payment discounts. Data capture solutions with artificial intelligence boost accuracy without manual intervention by capturing invoice header and line-item data automatically and validating invoice data early in the process against information stored in systems of record.
- 5. More early payment discount opportunities:** Using a data capture solution that incorporates artificial intelligence accelerates invoice approval cycle times which, in turn, enables organizations to capture more early payment discounts. Organizations with automation such as a data capture solution with artificial intelligence can process invoices in less than half the time of average companies (3.7 days versus 8.8 days) and in less than one-third the time of laggards (3.7 days versus 14.3 days), PayStream Advisors reports. Faster cycle times open the door to more opportunities to capture early payment discounts. Eighty percent of suppliers offer discounts in exchange for faster payment; the earlier the payment, the larger the discount on the invoice amount. Organizations that take advantage of just a discount term of 1/10 net 30 earn an annualized 18 percent return – a lot more than they can earn from a typical interest-bearing bank account. But most organizations capture less than 21 percent of all early-payment discount offers, and 12 percent of businesses are unable to capture any early-payment discounts, per IOFM. Slow cycle times are to blame. Data capture solutions with artificial intelligence create more early-payment discount opportunities through faster invoice approval cycles.

Together, automated data capture and artificial intelligence transform accounts payable into a strategic profit center.

Automation enables organizations to process **3.9 times** as many invoices and post **63 percent** more invoices straight-through, without human operator intervention, per Aberdeen Group.



**21%** of accounts payable departments surveyed by Ardent Partners identify long invoice approval cycles as their top challenge.



**52%** of businesses expect their accounts payable department to play a bigger role in working capital optimization within the next three years, Ardent Partners reports.





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## Conclusion

Using software or machines to capture invoice data may seem like the stuff of science fiction. But data capture solutions with artificial intelligence are helping accounts payable departments transform the invoice approval process by identifying patterns, learning and applying business rules and understanding imperfections. The technology enables accounts payable departments to get rid of the repetitive and menial data capture tasks that have held the profession back. With automated data capture and artificial intelligence, accounts payable departments can reduce labor costs, increase staff productivity, accelerate cycle times, eliminate errors, and capture more early payment discounts.

While the use of artificial intelligence for invoice data capture may not be worthy of a movie, the technology delivers blockbuster benefits to a function that is long overdue for transformation.

## About Hyland

Hyland helps more than 19,000 organizations handle their most critical content and processes with flexible, configurable software solutions. Our OnBase, Brainware Intelligent Capture and Perceptive portfolio of products simplify and automate Accounts Payable processes including invoice capture, invoice approvals, and exception handling. With Hyland, organizations connect process automation and content services with existing enterprise applications to eliminate manual data entry and centralize access to critical documents and data. Integrating Hyland products with enterprise applications provides the efficiency and agility organizations need to grow and innovate with confidence. Our industry expertise extends to organizations in Manufacturing, Retail, Healthcare, Finance, Insurance, Government, Higher Education, and more. From discovery and implementation to updates and expansions, Hyland is your partner in digital transformation.

## About the AP & P2P Network

The AP & P2P Network is the leading provider of training, education and certification programs specifically for Accounts Payable, Procure-to-Pay, Global and Shared Services professionals as well as Controllers and their F&A teams.

Membership to the AP & P2P Network ([www.app2p.com](http://www.app2p.com)) provides comprehensive tools and resources to financial operations professionals who manage or are deeply involved in the Accounts Payable and Procure-to-Pay process.

Focus areas include best practices for every AP & P2P function; AP & P2P metrics and benchmarking data; tax and regulatory compliance (e.g. 1099, 1042-S, W-9, W-8, Sales & Use Tax, Escheatment, VAT, Canadian Tax, Internal Controls); solutions to real-world problems challenging your department; AP & P2P automation case studies; member Q&A networking forums, Ask the Experts, calculators, and more than 300 downloadable, customizable AP & P2P policies, flowcharts, templates and internal control checklists.

A membership to the AP & P2P Network provides tangible ROI to any organization – saving your organization time, money and keeping you compliant.

Over 10,000 professionals have been certified as an Accredited Payables Specialist or Manager (available in English, Simple Chinese and Spanish), and Certified Professional Controller through the AP & P2P Network and its parent company, the Institute of Finance & Management.

AP & P2P Network also hosts the Accounts Payable and Procure-to-Pay Conference and Expo (Spring and Fall), designed to facilitate education and peer networking.

The AP & P2P Network is produced by the Institute of Finance and Management (IOFM), which is the leading organization providing training, education and certification programs specifically for professionals in Accounts Payable, Procure-to-Pay, Accounts Receivable and Order-to-Cash, as well as key tax and compliance resources for Global and Shared Services professionals, Controllers and their F&A teams. With a universe of over 100,000 financial operations professionals, IOFM is the trusted source of information in the rapidly evolving field of financial operations.