ARTIFICIAL INTELLIGENCE AND DATA CAPTURE: AN EVOLUTION OF EFFICIENCY

From Siri and Alexa to customer service chatbots, artificial intelligence (AI) has fundamentally changed many aspects of the way we work.

Data capture is no exception.

Automated data capture technology already increases workplace efficiency and decreases business costs. "Intelligent" capture takes it to another level, leveraging the power of AI and robotic process automation (RPA) to create a partnership that delivers even greater benefits.

Imagine feeding a batch of invoices into a scanner, stepping away and letting an attached computer both file and prepare them so you only thing you need to deal with the are the exceptions.

Truly intelligent capture software doesn't require templates, keywords, exact definitions, taxonomies or indexing to get the job done. It extracts the right information and makes sense of a wide variety of documents on its own, regardless of size, format, language or symbols used.

THREE WAYS AI IS CHANGING DATA CAPTURE

With intelligent capture software, the AI-driven "engine" can be taught — exactly like a new employee — how to perform a data entry task. It can quickly pick up on contextual information and learn to interpret patterns and features in different document types. Moreover, it can validate data against existing systems, providing an additional layer of protection that employees can't duplicate without tedious manual lookups.

Intelligent data capture has changed the game for three major tasks: classification, extraction and validation.

1 **Classification**

With classification, also known as document sorting, the software learns to recognize different types of documents after the user gives it a few variations and examples. Just like a human, the software can read through sample documents and intuitively understand similarities and differences. The machine learning engine cuts down on the rules that need to be applied, resulting in a high level of confidence in document classification with minimal manual effort.

2 **Extraction**

AI has done wonders for data extraction in semi-structured and unstructured documents. For instance, take invoice number identification, which usually involves building out complex templates and providing keyword tags and pairings around particular fields and labels.

A new employee can look at a document and immediately locate where invoice numbers are, no matter what the form looks like. Intelligent capture software can do that too — without the need for programming. The machine learning engine is trained to understand context: Like what should (or shouldn't) be around the invoice number. This leads to a high degree of accuracy in the extraction.

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Additionally, extracting data from complex stacked tables, with lines that don't match up (i.e. transcripts) is now a breeze. Mature AI software learns how to understand patterns and formatting, look for different types of information and identify key data elements without the need for someone to rope and band the information. Only the exceptions require human intervention.

3 Validation

AI is a game changer for tasks that go beyond the "scrape-the-page" approach. For example, it can match a line item in an invoice with purchase information stored in another system.

AI-driven search also allows for multi-way search, which means it can use multiple pieces of information (i.e. quantity, price, description and amount) to match an exact item in the back-end system. And even if things aren't precise matches — say, an abbreviation is used in the description of the invoice, but not the back end system — the software can deduce they are the same item.

Validating precise matches once required the efforts of a patient data entry clerk. By minimizing this type of work, employees can now work on higher-value tasks, further driving efficiency and minimizing business costs.

WORKING IN TANDEM: INTELLIGENT CAPTURE AND ROBOTIC PROCESS AUTOMATION

The enterprise robotic process automation (RPA) market is booming. So far, it's delivering on its promise of automating complex, rule-based processes. Forrester projects an overall market — of which document capture is just a slice — of $2.9 billion by 2021, up from a mere $250 million in 2016. (That's 10x growth in five years.)

Unfortunately, RPA's processes fail when there's too much variance — and with documents, sometimes there is nothing but variance. For instance, if two documents have the same type of information but are not in the same exact template, optical character recognition (OCR) errors occur.

It's important to note that the goal of AI-driven data capture isn't to replace humans, but to drive as much automation as possible with machines that can intelligently carry out tasks. Ultimately, employees are freed from being bogged down by mundane tasks and can take on high-value tasks that require a human mind to do well.

Combining standard RPA concepts with an AI engine creates a dynamic variance network — a way for software to look at everything in relation to all information on a document. That way, it overcomes OCR errors during the extraction process by using relative location to determine where to find a specific data field instead of a single, memorized location. On top of that, the software monitors the activity of the user and will make corrections based on that behavior without human intervention.

In other words, the system gets smarter on its own.

THE REAL VALUE OF INTELLIGENT DATA CAPTURE

In addition to the obvious automation benefits, using intelligent data capture software eliminates guesswork on the setup and programming side. But it's important to note that the goal of AI-driven data capture isn't to replace humans, but to drive as much automation as possible with machines that can intelligently carry out tasks. Ultimately, employees are freed from being bogged down by mundane tasks and can take on high-value tasks that require a human mind to be done well.

One thing is certain: Successful companies aren't built in a templated world. Information and documents continually change, and they must learn and adapt — ideally, with technology that does the same.

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