Navigating the Future
Automating business with IDP & generative AI

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Over the past decade, automating business transactions has become a primary focus for business and operations managers. Considerable progress has been made in digitizing paper-based inputs early in the process. However, paper documents now represent a declining portion of transactional inputs, such as B2B invoices, ID applications and auto insurance claim documents. Today, a substantial portion of these inputs arrive in digital formats, often as email attachments or file uploads to websites or apps provided by government agencies or businesses.

In our annual assessment of the intelligent document processing (IDP) market, Infosource tracks the inputs to IDP software based on data from vendors (see the graph on this page). Our latest report, "The 2023-2024 State of the IDP Industry," reveals that new solutions process more than 50% of digital inputs, with most being digital documents like PDFs. This shift to digital inputs continues at a gradual pace, following the significant transition from analog to digital during the COVID-19 pandemic.

To seamlessly process all inputs for a business transaction (which may include a mix of paper-based and digital inputs such as documentation for a P&C insurance claim), an efficient capture solution capable of processing inputs from various channels is essential.

Unstructured Documents: A Major Bottleneck for Process Automation

When examining the bottlenecks in crucial transactional processes, unstructured documents often top the list. While structured documents (e.g., forms) are typically processed automatically once scanned or received digitally, and semistructured documents (e.g., invoices and receipts) have seen significant automation progress, unstructured documents remain a challenge. Mission-critical business processes often include unstructured documents like letters, loan application support documents and expert damage assessments for insurance claims. These documents must be classified, key information identified, extracted and analyzed, and then submitted to downstream business applications.

Progress & Challenges in Processing Unstructured Inputs With Intelligent Capture Software

In recent years, intelligent capture software vendors have

Global Business Inputs to IDP Solutions
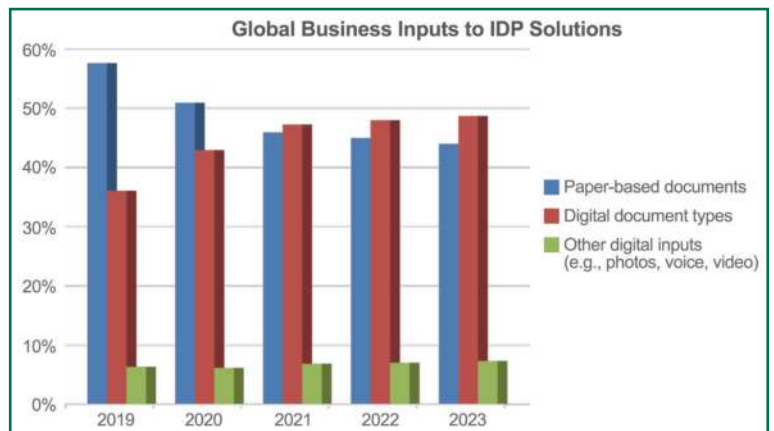
made notable progress in processing unstructured inputs, yet challenges remain. The widespread deployment of AI technologies has enhanced capture solutions, beginning with efforts to address challenges related to character recognition in low-quality documents, handwriting and languages with complex characters, such as Arabic. AI-based recognition methods have shown superior performance in these difficult use cases, as demonstrated by the AI recognition services of hyperscalers. Additionally, AI has significantly augmented OCR engines, integrating neural network technology to validate recognized words against a dictionary, utilizing contextual understanding.

Document classification has also seen substantial advancements through AI technology. The shift to intelligent document classification, leveraging natural language processing (NLP) and machine learning (ML) to analyze textual and visual document elements and assigning them to predefined types represents a key breakthrough. However, many vendors still rely on "non-deep" learning approaches, with systems trained by human experts using sample documents.

A particularly important aspect in handling unstructured documents involves very complex documents, such as comprehensive contracts or annual reports. AI solution providers have developed specialized systems for complex documents, like financial documents, that identify and extract critical data elements using a combination of rule-based and ML named entity recognition (NER).

Despite these considerable advancements in capture solutions driven by AI technologies, several challenges have limited or slowed the adoption of intelligent capture and IDP solutions.

Generative AI Technologies Offer Significant Enhancements

Generative AI technologies promise to tackle major challenges in IDP (see the graphic below). Leveraging large language models (LLMs), IDP solutions have shown improvements in recognizing text types that were previously difficult, even for computer-vision-based engines. Document classification tools utilizing LLMs and deep learning technologies now deliver impressive out-of-the-box results, especially in scenarios involving a wide variety of input types with frequently changing characteristics.

Advanced LLMs, such as GPT-4o, provide key capabilities for processing non-English languages, enabling efficient handling of multilingual inputs. These LLMs also enhance the ability to manage omnichannel inputs that include non-text-based business inputs. Furthermore, NLP commands allow for the continuous updating and enhancement of input ingestion solutions by defining additional entities for extraction.

Generative AI technologies also empower knowledge workers when analyzing complex business inputs, like contracts. With natural language prompts, users can request summaries of lengthy documents and extract key information beyond predefined data extraction fields.
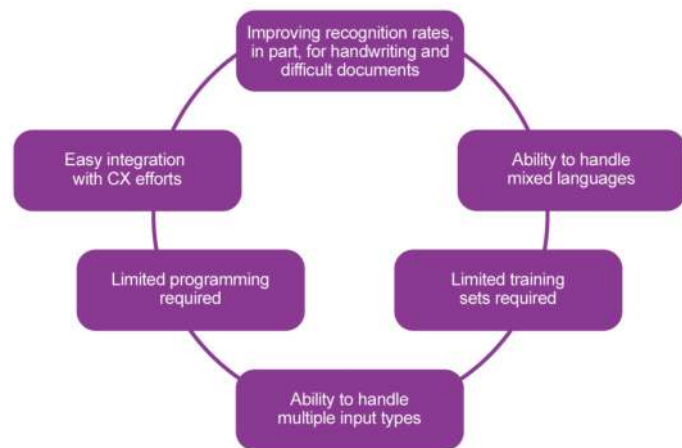
Significant Customer Demand Expected for IDP Solutions in North America

Infosource conducts comprehensive quantitative analyses of the demand for IDP solutions. This analysis is based on input from hundreds of global IDP vendors, which is then converted into actual and projected investments by end customers in IDP solutions.

Our latest study update reveals a robust demand for IDP solutions, ranging from standalone capture solutions to the input ingestion elements of extensive automation solutions, reaching nearly $3 billion in 2023.

While generative AI-based solutions present a step change

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for the automated ingestion in particular of unstructured business inputs, we currently see a phase of disillusion related to the business value of advanced AI technologies. This is partly caused by overstated expectations for the business impact of generative AI-based solutions. End customers also hesitate to deploy generative AI technologies due to concerns about data privacy, price premiums associated with the use of general LLMs, cultural concerns and skill gaps.

These inhibitors are crucial to consider, but are expected to have primarily short-term impacts on the IDP market. A good example is the ROI of generative AI-infused IDP solutions, which is anticipated to shift from an initial inhibitor to a future driver. During the early adopter phase, organizations often did not thoroughly select applications or assess business cases. Now, based on these learnings, organizations are reassessing priorities and selecting business cases where generative AI offers tangible results.

At the same time, vendors are enhancing their generative AI deployments and partnering with integrators and end customers to pilot opportunities. Once use-case characteristics and implementation requirements with strong ROI have been identified and consistently demonstrated, they will serve as accelerators as organizations scale and expand their applications.

In the near term, we also expect significant advancements in advanced AI solutions, such as customized or specialized language models and retrieval augmented generation (RAG), which will address concerns like privacy and accuracy.

The IDP market in North America is expected to experience a temporary slowdown in IDP deployments, particularly for generative AI-based solutions, over the next three years. This phase will allow for addressing concerns, advancing technology and achieving more attractive ROIs in business cases.

Despite this, end-customer investments are projected to drive a compound annual growth rate (CAGR) of more than 11% in North America, growing market demand from around $3 billion in 2023 to $5 billion by 2028, with accelerating growth rates over time (see the graph below).
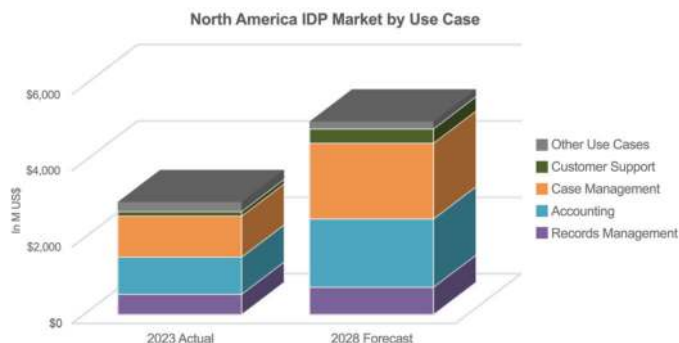
IDP Use Cases With Key Future Opportunities

Infosource's annual quantitative assessment of the global and regional IDP markets focuses on predicting future market opportunities, including detailed forecasts of market metrics like use cases (see the graph below).

In the near term, generative AI technologies are expected to significantly impact IDP use cases involving information-intensive business applications with large quantities and varieties of inputs. These include long, complex documents and business inputs arriving in multiple formats and languages.

Examples of such use cases are digital mailrooms in shared services centers or BPO organizations, and what we term "case management" business applications. Case management use cases encompass horizontal scenarios like new employee selection and onboarding, as well as vertical-specific scenarios like insurance claims management.

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North America IDP Market by Use Case

In these contexts, generative AI-infused IDP solutions enhance efficiency, reduce errors and biases in decision-making, and ensure data-driven outcomes. They also alleviate the administrative burdens on knowledge workers, boosting their motivation and enabling them to focus on analysis and critical decision-making.

Additionally, generative AI tools significantly enhance the customer experience by generating customized and personalized communications. Integrated communication steps, such as requesting missing inputs or providing status updates on business transactions, have the potential to greatly improve customer satisfaction.

Office Technology Industry Recommendations

The expected changes in the market will significantly impact the office technology sector. The shift from analog to digital business inputs, along with the move toward multichannel and multiformat inputs, will present considerable challenges for office technology dealers. The rising interest in automating input ingestion as part of end-to-end process automation places a stronger emphasis on the downstream processing of business inputs and reducing manual steps throughout the process.

While these shifts have been gradually unfolding over the past several years, generative AI technologies introduce a step change in ease of implementation, accuracy and automation opportunities. Therefore, I would like to close with a few recommendations for office technology dealers:

■ **Expand Offerings** — Explore opportunities to expand your product line to include intelligent capture software and IDP solutions that complement existing scanning software. Highlight the added value these advanced tools bring to your customers' workflow automation.

■ **Stay Informed** — Continuously monitor generative AI developments and their implications for the capture market. Understanding the latest advancements will keep you competitive and ready to leverage new opportunities.

■ **Vendor Assessment** — Reassess your current vendor partners based on their efforts to integrate generative AI technologies. Prioritize partnerships with vendors leading in AI exploration and deployment to ensure that you offer cutting-edge solutions.

■ **Network Expansion** — Broaden your vendor network to include partners at the forefront of AI and generative AI innovations. Building relationships with industry leaders will provide access to the most advanced and effective solutions.

■ **Educate Your Customers** — Provide training and resources to help your customers understand and implement generative AI technologies. Offer ongoing support to ensure they achieve the best ROI from their investments in IDP solutions. ■

Petra Beck is a senior industry analyst at Infosource Software, where she leads the analysis and forecasting of the global intelligent capture software and intelligent document processing markets. Beck also provides strategic and growth planning support to Infosource clients. With more than 25 years of experience in the information management market, she brings a wealth of knowledge and expertise. Before joining Infosource, Beck held global roles in industry-leading strategic planning, market intelligence and thought leadership. She holds a degree in business administration and has completed multiyear assignments in the United States, the United Kingdom and France. Beck can be reached at pb@info-source.com. Visit www.info-source.com.