



TRANSFORMING PROCESS AUTOMATION WITH SYNCURA'S COGNITIVE AI

A Syncura White Paper

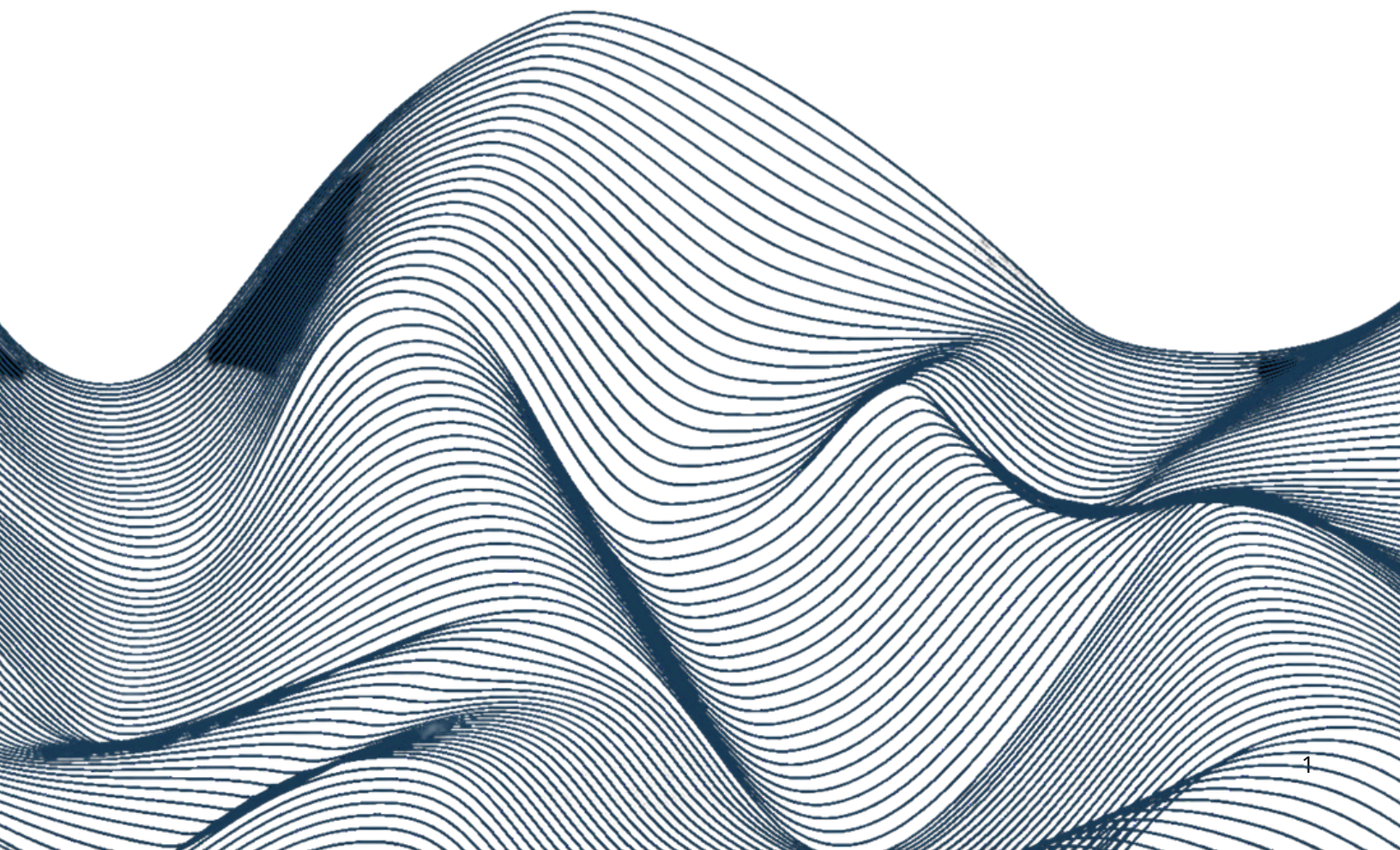


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Executive Summary

Most businesses aspire to automate their processes, but traditional document processing and business process automation tools break down when confronted with variability, ambiguity, or rapid change.

Syncura's Cognitive AI introduces a new paradigm. By combining advanced visual AI for perception, predictive AI for forecasting, and agentic AI for reasoning, it interprets documents, user interfaces, and other inputs much like humans do. This multi-agent platform adapts in real time without retraining or rigid rule maintenance.

With this foundation, Syncura automates complex workflows across industries such as loan underwriting, insurance claims, contract analysis, and global supply chains. It processes ambiguous and irregular documents "zero-shot," - without any prior training - continuously learns from experience, and strengthens resilience. For organizations, Syncura delivers adaptability, transparency, and cost efficiency at scale.

Introduction

\$1.8 trillion

is spent each year in the US on repetitive, mundane tasks such as data entry, invoice processing, and report generation.

Organizations today are grappling with rising complexity. Deglobalization and shifting tariff regimes are reshaping supply chains. Regulatory frameworks are becoming more demanding. Customer expectations are higher than ever. Meanwhile, demographic shifts in many developed countries point to looming labor and capital shortages. To remain competitive, companies must boost productivity and automate as much as possible. This is where Syncura comes in.

This paper examines the limitations of legacy document processing and process automation tools, explores both the promise and the pitfalls of large language and action models, and explains how Syncura's Cognitive AI enables businesses to understand documents and automate processes previously considered too variable or too niche for automation.

Syncura enters the market at a moment when urgent business needs intersect with accelerating digitalization and rapid advances in artificial intelligence (AI). The stage is set for companies to achieve significant gains in productivity and agility through process automation.

The potential is substantial. McKinsey Global Institute estimates that automation could raise global productivity growth by 0.8% to 1.4% annually. Research from Gartner and Forrester indicates that businesses adopting AI-driven automation are already reducing costs by 30% to 50% and increasing process speed by 60% to 80%.

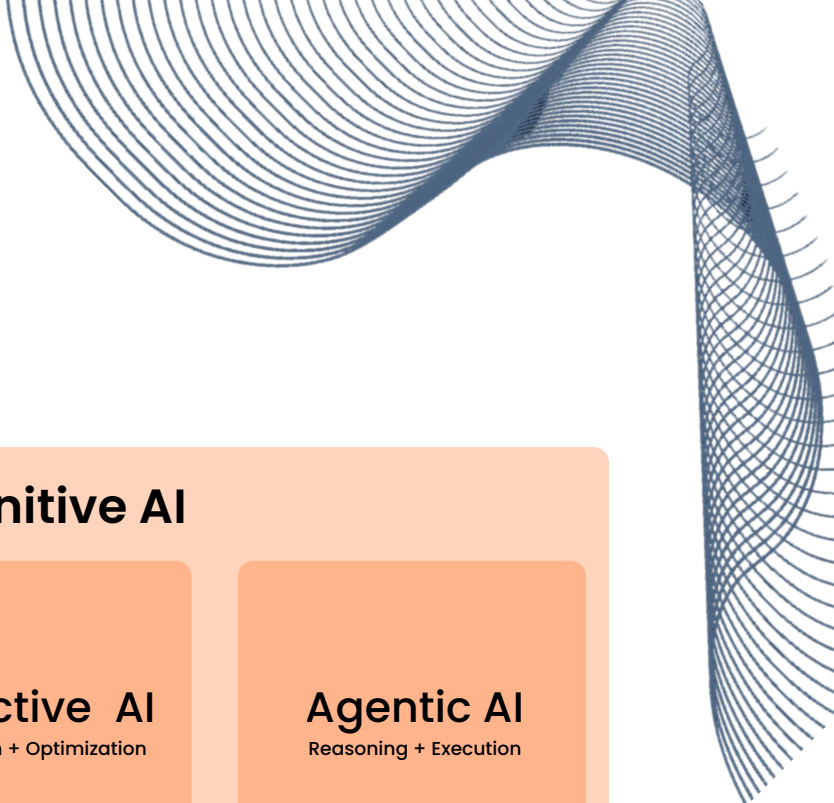
Still, several obstacles remain. Vast amounts of business value are locked in unstructured data. Meanwhile, the proliferation of software services and the rapid pace of technological and market change make processes increasingly variable. These challenges place a heavy burden on internal operations, particularly in document-heavy workflows.

Most of today's solutions cannot keep up with shifting, nuanced, and visually diverse processes. As a result,

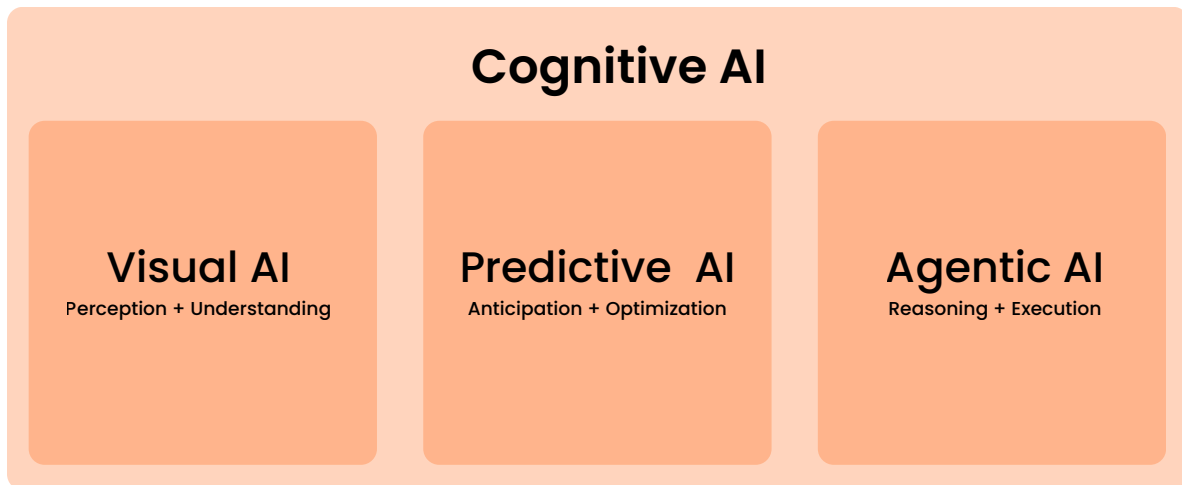
70% to 80% of processes that could in theory be automated remain beyond the reach of traditional approaches.

The root cause lies in the fragility of legacy systems, which falter in the face of ambiguity, variation, or change.

A fundamentally new approach is required, one that prioritizes perception and pattern recognition over rote execution. Just as humans rely on visual processing in the brain to absorb and interpret information before making decisions, the next generation of document processing must combine visual perception with natural language understanding, structural analysis, and contextual awareness. Like people, these systems must adapt by blending perception with experiential patterns and reasoning abilities.



This is the foundation of Cognitive AI:



Together, these components form the multi-agent automation architecture that powers Syncura's two core products:

- **Syncura Cognitive Document Processor (CDP)**
- **Syncura Cognitive Process Automation (CPA)**

Syncura overcomes three persistent challenges in enterprise automation:

1. the need for extensive model training,
2. the brittleness of rigid rule coding,
3. and the heavy burden of continuous exception maintenance.

Unlike traditional systems, Syncura's perception-first visual AI approach does not rely on predefined templates or tens of thousands of training documents. It adapts on the fly, delivers immediate value, and scales quickly. By learning from experience, it improves continuously.

Adaptability is the key differentiator. With Syncura, organizations can extend automation into domains that were previously inaccessible.

The Legacy Plateau

For the past 25 years, improvements in process efficiency have largely been driven by advances in document processing and automation. Organizations have long sought to accelerate document handling, improve accuracy, and reduce costs.

The combination of optical character recognition (OCR) and natural language processing (NLP) marked an important step forward from manual processing. Yet OCR was imprecise and limited, which led many organizations to adopt intelligent document processing (IDP) tools powered by machine learning. While IDP delivered notable gains, it also introduced two major challenges.

1. Training is costly and time-consuming. Semi-structured documents can require up to 2,000 labeled samples for effective training, while unstructured formats may demand 10,000 or more.
2. Training tailored to a specific document type or layout narrows the range of documents where IDP can deliver strong results.

Many IDP vendors report accuracy levels of 95 percent or higher. On the surface this seems impressive, but the numbers can be misleading.

Accuracy is often measured only on documents that successfully pass through the straight through processing review. In practice, the 95 percent figure may apply to only 25 percent of documents. The remaining 75 percent typically fall back to manual processing.

From a business standpoint, the “useful accuracy,” measured across all documents that actually need to be processed, is significantly lower. Given the central role of documents in enterprise workflows, this inconsistency drives up costs and undermines business outcomes.

As document processing advanced, so too did the technologies underpinning process automation across the enterprise. For the past two decades, robotic process automation (RPA) and its successors have served as the backbone of enterprise automation. RPA was designed to replicate human interactions with software interfaces: clicking buttons, filling out fields, and scraping data from screens. Because of its rule-based nature, however, RPA breaks whenever it encounters unexpected changes. Over time, this brittleness has become a critical limitation, leading to missed deadlines, delayed deliveries, rising maintenance costs, and declining customer satisfaction.

The success of machine learning inspired many organizations to pair AI with RPA, creating Intelligent Process Automation (IPA). IPA promised seamless orchestration of data and systems, raising hopes of frictionless processes and minimal oversight. In practice, however, IPA has fallen short. Both IPA and RPA work best in static, controlled environments. They lack the perceptual and contextual intelligence required to thrive in dynamic, high-variance business ecosystems—conditions that now define most industries.

To compensate, legacy platforms often layer on exception-handling logic and fallback processes. This adds even more complexity, cost, and latency.

The result is an automation stack that resembles a Rube Goldberg machine: fragile, inefficient, and over-engineered to complete even simple tasks.

Engineers spend more time patching brittle automations than building new ones. As a result, outside of the highest-volume repetitive processes, many business leaders have grown skeptical of the return on investment promised by RPA and IPA.

Visual AI: Understanding Before Acting

What sets Syncura CDP and CPA apart is not only that they process documents and automate business workflows, but also how they do it.

Syncura's visual AI analyzes the geometry and interrelationships of content elements, while also incorporating external factors such as job queue naming, organizational context, and industry-specific rules. This enables it to decode meaning and intent embedded in highly variable documents such as invoices, contracts, and financial statements, as well as in application interfaces like insurance claims systems, loan approval portals, and virtual desktop environments.

Like humans, Syncura groups raw data into composite objects that allow it to organize, interpret, and contextualize information. The result is a deeper understanding of context, greater recognition of nuance, and the ability to flag anomalies that could create risks or costs later in the process.

Visual AI is not an incremental step forward; it is a fundamental shift in how automation systems perceive and engage with the world.

Consider a multiparty legal contract. Clauses may be scattered across sections, footnotes may introduce exceptions, signatures may be out of sequence, and handwritten notes may appear in the margins. Traditional OCR or NLP systems might extract the words but lose the meaning, context, and relationships between identifiers and their associated values. A template-based intelligent document processing tool might capture a handful of known fields but miss subtle dependencies.

Syncura's visual AI, by contrast, understands hierarchical layout, identifies section boundaries, correlates references, and interprets data in context. If one clause modifies another, it records the dependency. If dates conflict, it highlights the inconsistency. It builds a cognitive map of the document or interface, not just a flat list of extracted text.

This sophistication is enabled by a coordinated stack of complementary technologies:

- **Large vision models** detect structural features such as table rows, columns, headers, and embedded components.
- **Deep learning OCR engines** extract characters from noisy or distorted inputs, including handwriting and multilingual text.
- **Vision-language models** unify semantic and spatial signals, interpreting content in the context of its layout.
- **Semantic parsers** translate narrative text into structured meaning, capturing both content and intent.
- **Domain-aware validators** cross-check data against business rules, ontologies, and real-world expectations.
- **Multi-agent collaboration** allows different models to compare, debate, and refine results for greater accuracy.
- **Reinforcement learning loops** capture feedback from human reviewers, continuously tuning system performance.

Together, these capabilities form a resilient perception engine that adapts as it learns. Unlike systems that must be retrained every time a format changes, Syncura's visual AI generalizes from first principles. It identifies not just predefined fields but meaning in context. Just as people do not need to read thousands of documents before understanding how to interpret them, Syncura can process documents "zero-shot," without prior training.

By the time a document leaves Syncura's visual AI layer, it is no longer raw input. It has been transformed into a structured, semantically coherent object ready for downstream prediction, reasoning, analytics, and decision-making. This unlocks automation for use cases that were previously out of reach, including physician notes and medical records, customs declarations and shipping manifests, vendor invoices, and other irregular, inconsistent, or ambiguous formats.

Visual AI gives Syncura CPA the ability to understand before it acts.

This crucial distinction redefines what process automation can achieve in the AI era. Without first perceiving and understanding an input, whether a document, a form, or an application screen; no reasoning engine, however advanced, can consistently deliver reliable results.

Intelligent Agents Need Eyes

The rise of agentic AI, built on large language model (LLM) reasoning systems, has generated well-earned attention and renewed excitement in the field of process automation. In theory, this technology can improve both the efficiency and quality of processes that require risk evaluation, trade-off analysis, and decision-making. The idea of AI agents that manage mortgage applications, process insurance claims, or optimize supply chains faster, better, and at lower cost is transformative. Yet to reach this potential, these systems must be complemented by technologies such as visual AI.

LLMs and large action models have expanded the boundaries of automation. AI agents can now perform multistep reasoning, interpret context, solve dynamic problems, and even plan reflectively. This opens the door for process automation that goes beyond deterministic scripts and static rules, adapting fluidly to evolving inputs and shifting business logic.

However, applying agentic AI at scale faces challenges.

LLMs excel at generating fluent text, summarizing reports, and engaging in natural conversation, but they are not inherently equipped to interpret unstructured, messy, or visually complex inputs.

They are trained on linear text streams rather than the two-dimensional layouts common in real-world documents and user interfaces. Documents and applications often convey meaning through non-textual cues such as bold headings, indentation, highlighting, or margin notes.

Because LLMs have no intrinsic sense of spatial structure, they cannot, for example, reliably recognize that “Section 3.2” is a key conclusion, or that a red-boxed sidebar contains a critical exception. When confronted with inconsistent layouts, missing headers, or handwritten annotations, their accuracy drops significantly.

This gap creates problems in business workflows. If an LLM's internal representation of a document is incomplete or distorted, every downstream task such as summarization, data extraction, or question answering, suffers. Outputs may include truncated summaries, misplaced table values, or nonsensical answers to simple queries such as "What was the budget for Q4?" Without visual context, the likelihood of hallucinations also increases. These plausible but false outputs can undermine entire workflows and expose organizations to significant risk.

The limitation is not surprising. Human decision-making would also collapse if our reasoning centers were exposed directly to billions of raw photons without the preprocessing that our eyes and visual cortex provide. Vision filters, organizes, and contextualizes information before thought begins. Without this step, we would be overwhelmed and unable to act.

AI faces a parallel challenge. When models are exposed to too much unstructured or poorly contextualized data, they experience "overloading." They can still generate smooth text, but the coherence and logic break down. Small errors, such as a misread OCR character or an incorrectly parsed header, can cascade into larger failures as the model reasons over unstable context. This error amplification often leads to outputs that diverge significantly from the source material.

In addition, large context windows and heavy compute cycles are consumed while the model struggles to process what it cannot fully understand.

Without structured, high-quality, and visually grounded inputs, even the most advanced frontier models falter.

Cognitive AI

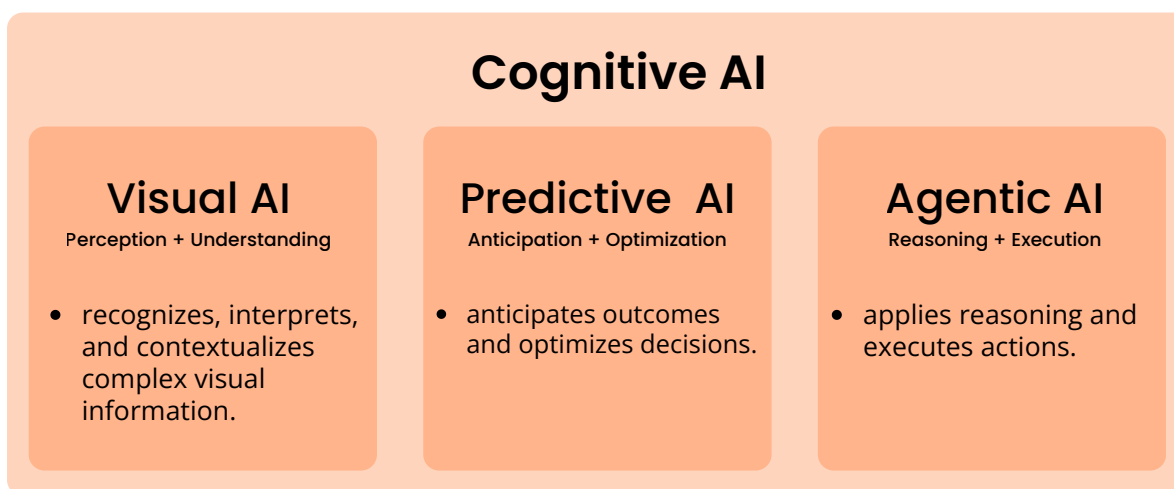
This is where Syncura's approach stands apart.

Visual AI by itself is powerful, enabling the processing of complex, unstructured data through perception, observation, and contextual interpretation. It can gracefully handle variability that breaks traditional systems.

Predictive AI adds another critical dimension by forecasting outcomes and highlighting potential issues before they occur.

Both of these strengthen the ability of Agentic AI to make high-quality decisions and execute tasks effectively.

When visual AI's perceptual preprocessing and predictive AI's forecasting capabilities are combined with Agentic AI's reasoning and autonomous execution, the result is Cognitive AI.



Most business tasks involve high-throughput perception and execution. They are relatively predictable and primarily rules based. Visual AI can manage variability, while predictive AI flags likely exceptions and aberrations. Reasoning systems are used more selectively, since they are computationally expensive and present governance challenges.

In cases where processes require assessing risk, making consequential decisions, or coordinating complex multi-step actions across external systems, accuracy and efficiency improve when reasoning is supported by visual and predictive AI as preprocessors.

Visual AI structures and contextualizes the data, while predictive AI analyzes historical patterns and anticipates future scenarios. This preprocessing dramatically enhances the quality and reliability of the reasoning layer.

Syncura's cognitive AI approach transforms this division of labor from a tactical choice into a breakthrough automation architecture. The result is a system that is lightweight, accurate, cost-efficient, and highly adaptable to changing conditions.

Equally important, the combination of visual, predictive, and agentic AI enhances safety, transparency, and explainability. Syncura records each stage of perception, prediction, and reasoning, creating a clear audit trail. This transparency simplifies compliance with regulatory standards and strengthens organizational governance.

Reimagining Workflow Automation

Once visual AI has established the perceptual foundation, Syncura's Cognitive Process Automation (CPA) engine moves from interpretation to execution. This is where the platform's full capability comes to life.

Instead of relying on pre-scripted rules or fixed workflows, Syncura begins with observation. It does more than record actions; it interprets context and infers intent. This allows it to remain adaptive, handling new variables and changes without disruption. By building a living model of each process based on observation, feedback, and prior learning, Syncura automations evolve continuously.

Self-reflection and adaptation ensure that workflows keep running without the constant intervention or maintenance typical of traditional systems.

CPA employs an observer agent. It learns by watching how workers interact with applications, classify inputs, escalate issues, and verify identities. It can recognize variations in how different employees complete the same task and then abstract those observations into an automation. Rather than duplicating steps, it captures the underlying intent.

Over time, CPA becomes resilient to change. If a screen layout shifts or a new form is introduced, it adapts automatically. Because it understands processes visually rather than just through system instructions, it can even automate scenarios previously considered too complex, such as those involving virtual desktops.

Syncura CPA also models processes as multistage, multivariant flows, enabling it to manage complexity. It tolerates conditions, branches, retries, and mid-process policy updates without breaking. If conflicting inputs arise, multiple agents collaborate and cross-check results to deliver the most reliable outcome, like a team of experts validating each other's work.

This flexibility delivers transformative business impact:

- Onboarding times are reduced because automations no longer require weeks of setup.
- Operational resilience improves because workflows withstand interface and policy changes.
- Exception handling is simplified because ambiguity is resolved through agent collaboration.
- Performance strengthens over time as the system learns from experience.

Traditional automation depends on brittle, human-authored scripts.

Syncura CPA replaces that fragility with adaptability. It transforms automation from a static engineering effort into a dynamic business capability, allowing organizations to focus on outcomes rather than orchestration.

Where it Works: Transformative Use Cases

Syncura CPA does more than automate tasks. It automates the thinking behind tasks—and that shift changes everything. The best way to understand its impact is by looking at where it succeeds where other solutions fall short.



Financial services:

Syncura CPA supports loan origination, underwriting, and KYC validation across diverse customer documents. From pay stubs and tax returns to investment statements and correspondence, Cognitive AI adapts to any format, extracts key indicators, maps relationships, validates figures, and flags risky discrepancies—without templates or retraining.

Insurance:

Syncura automates handling of first notice of loss reports, policy endorsements, photos with embedded metadata, and customer correspondence, improving accuracy and speeding claims.



**Health care:**

Syncura CDP processes physician orders, diagnostic charts, lab forms, and insurance preauthorizations. It recognizes medical terminology, understands the conventions of clinical documentation, and even interprets handwritten notes. By preserving clinical intent while structuring the data, it supports both electronic health record management and claims processing.

Logistics & Supply chain:

Syncura reconciles invoices, customs documents, bills of lading, and shipping manifests, ensuring smoother cross-border operations and fewer manual interventions.



These use cases are not niche; they represent core business processes. Wherever humans are currently required to process messy, inconsistent, or unstructured documents, Syncura CDP provides a solution.

And wherever automation has previously failed because the challenges were too complex or the costs outweighed the benefits, Syncura CPA reopens the path to automation.

Conclusion



Syncura's perception-first approach marks the beginning of a new era in process automation. The shift is no longer about scripting steps; it is about systems that sense, think, and adapt.

What distinguishes Syncura CPA is not speed alone, but intelligence. By starting with perception, it automates with context and understanding rather than brittle rules.

For organizations, the impact extends well beyond efficiency gains. They benefit from stronger compliance, improved customer satisfaction, and faster time to value. Most importantly, they gain confidence:

- Confidence that automations can withstand format changes.
- Confidence that AI will act responsibly within established guardrails.
- Confidence that compute costs will remain predictable.
- Confidence that maintenance will decline as the system learns and improves.

With Syncura, automation evolves from a tactical tool into a trusted capability. One that is scalable, resilient, and ready to meet the demands of modern business.

About Syncura:

Syncura is a leading provider of advanced cognitive document processing and cognitive process automation solutions. Its technology enables businesses to automate complex processes and handle dynamic document workflows with unmatched accuracy and efficiency. Its groundbreaking observational cognitive AI technology mimics human-like reasoning, allowing organizations to streamline operations, reduce costs, and improve productivity without extensive manual setup or retraining.

Syncura's Cognitive Document Processor and Cognitive Automation Platform continuously adapt and learn, ensuring flexibility and scalability across industries such as finance, legal, healthcare, and others. With Syncura, businesses can confidently automate their most challenging processes and tackle complex document management tasks.

Syncura is committed to driving innovation in the automation space by combining cutting-edge AI technologies with deep industry expertise. By providing solutions that evolve with changing business needs, Syncura empowers organizations to stay ahead in an increasingly automated and interconnected world.

For more information, visit www.syncura.ai or send us an email at info@syncura.ai