

Intelligent Document Processing

With Adaptive ML and Post Processing

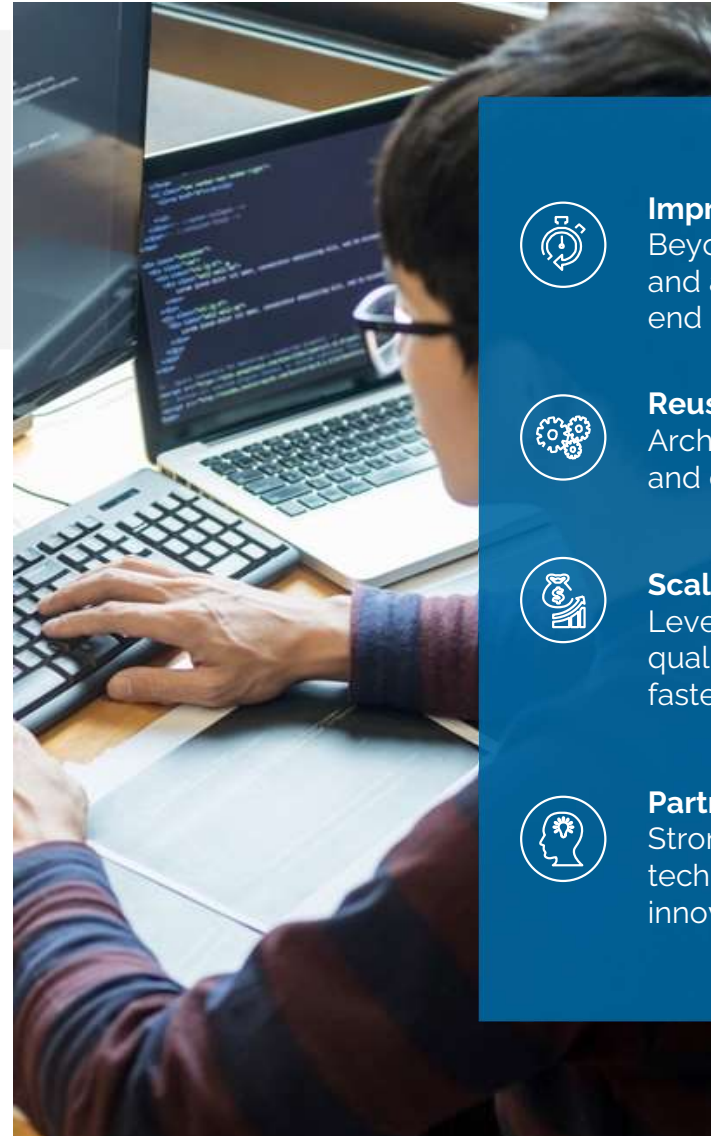
Trusted partner for your Digital Journey

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Atos

Intelligent Document Processing

Accelerating Value in Business Operations



Improved Service

Beyond task automation, reimagining and automating more of each end-to-end process



Reusable Accelerator

Architected for reuse, maintainability and customization



Scale Business Efficiency

Leveraging best practices and driving quality automation into production faster



Partner Ecosystem

Strong partner ecosystem and proven technology solutions to drive innovation



Financial Services

- Bank statements
- Invoice Processing
- Account openings



Manufacturing

- Quality assurance records
- Change requests
- Sales Orders



Insurance

- Insurance Claims
- Broker Slips
- KYC



Healthcare

- Patient Onboarding
- Physician referrals
- Claim documents



Telecom, Media, Technology

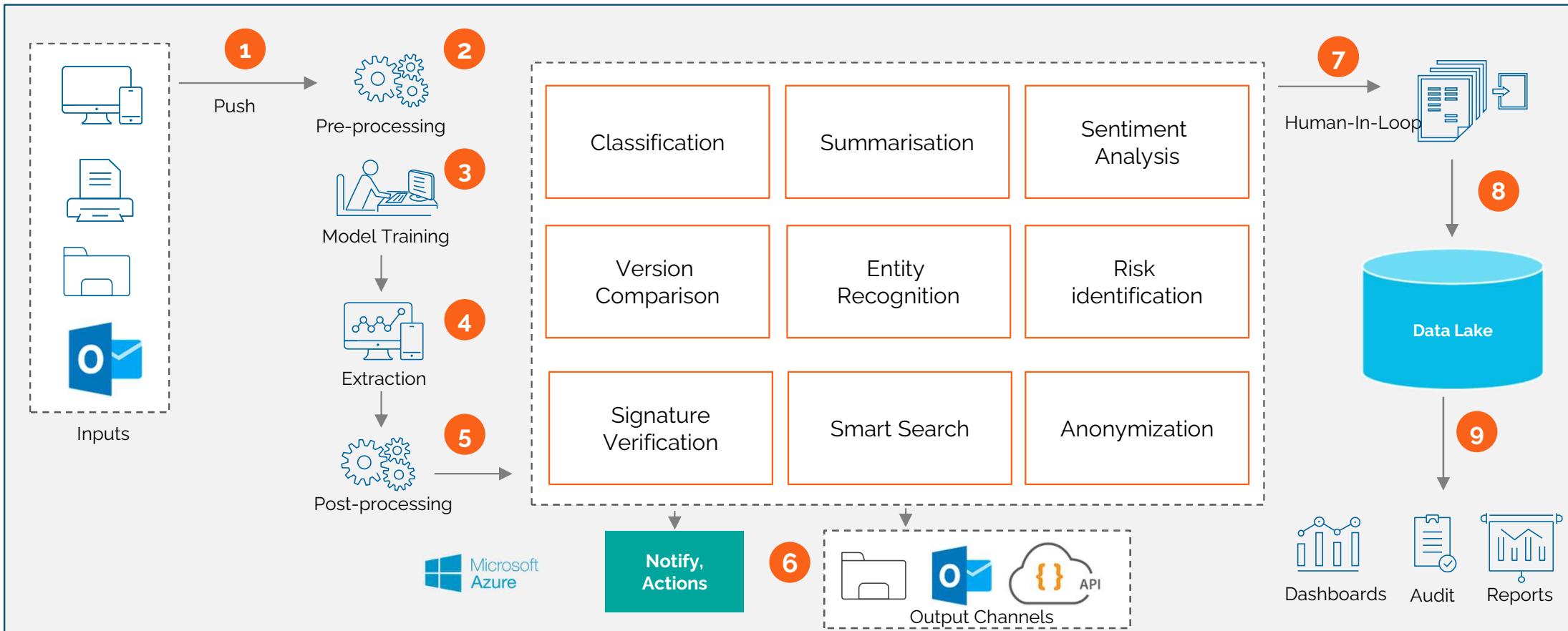
- Custom declarations
- Maintenance logs
- Customer onboarding



Retail, Logistics, Transport

- Bill of lading
- Order scheduling & tracking
- Proof of Delivery

IDP- Capabilities



IDP– Use Cases

Use Cases	Customer	Functionality
Contract Summarization a cognitive solution that can reduce manual handling of contract documents and effectively summarize the contracts	Telecom	Version Comparison, Summarization
BOL Processing Eliminate the manual keying-in of BOL data and process the BOLs as they arrive in the service centers – Ensure reduction in cost of Operations	Logistics	Low DPI and Handwriting
Order Processing Intelligent Order Processing with Adaptive post processing to extract the Order content and validate process. Global and client level processing adaptiveness. Process complex layouts with row overflow	Mfg.	Adaptive ML and post processing
Annotation & Anonymization Document annotation and anonymization solution as input for ML pipeline	IT Industry	Annotation, Anonymization
Signature detection & comparison Automated solution to detect and compare signatures for optimizing the validation process	Financial Services	Classification, Signature Comparison
Automating Consolidation of Balance Sheets & Annual Reports Document processing solution for balance sheets and annual reports content extraction and validation	Mfg.	Classification, Entity Recognition
LIBOR Transition Automated solution for LIBOR data extractions from its Master Agreements	Financial Services	Advanced NLP (Unstructured Data)
Broker Slip Automation solution to automate the broker slip processing with focus on reducing costs and improving efficiency	Financial Services	Classification, Entity Recognition
Optimizing Processing of Financial Benefit Forms Automated solution for fields extraction and validate the extractions	Govt	Classification, Entity Recognition

Challenges and Learnings from Multiple IDP Implementations

Challenges

Variations in data, layouts (Structure) & taxonomies,
Limited samples

Complex tables (column overflow, merged cells,
multi-page etc.)

Confidence on extraction accuracy in complex cases
(Handwritten, unstructured content, complex
layouts)

Learnings

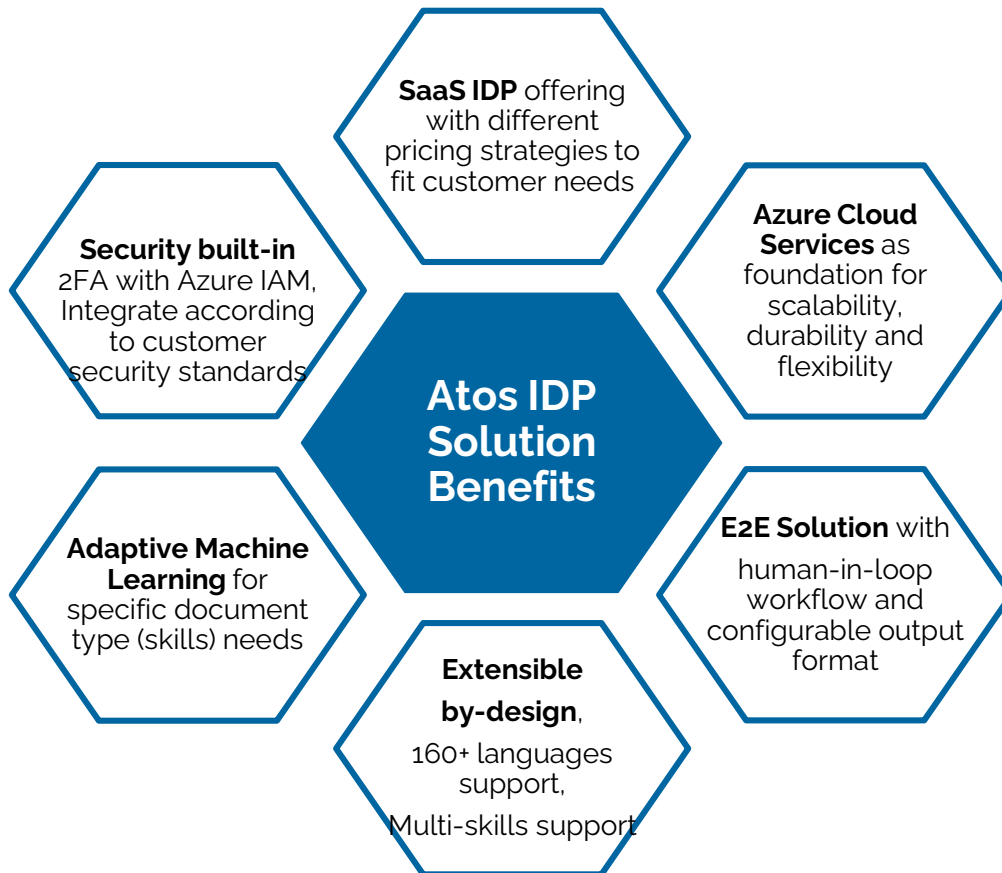
Hybrid solution approach (ML, Rules & Taxonomies) work
best in most of complex document processing use cases

Configurable table processing algorithm combining
intelligence from header/footer locations, rules and data
cross-validation for robust table processing

Configurable multiple level of validation (Confidence
score, rule-based validation, data-based validation,
Human-in-Loop) needed for efficient & reliable process

Intelligent Document Processing (IDP) with Adaptive ML and Post Processing

Solution Overview and Benefits



Unified IDP Framework to process Semi structured, Unstructured, Emails and Handwritten content



Advanced NLP Capabilities to do entity recognition, classification, summarization, sentiment analysis etc.,



Multi knowledge skill (document type) training & processing in single cloud environment with isolated storage.



Taxonomy based system to provide high accuracy and capture rate for processing wide range of domain documents



Adaptable Machine Learning and post processing per knowledge skill. Configurable data and business rules validation



Conformance to data privacy requirements possible with private cloud deployment using containers

Cognitive Solutions- IDP

Decarbonization rating:



Business challenge

Customer are facing following challenges with manual processing of documents,

- High cost of operations due to manual processing of documents
- High lead-time in critical business processes impacting SLAs
- Human errors leading to decreased reliability and consistency of processes
- Difficult to scale-up or scale-down operations based on business demand

Offering description

Unified Document processing solution which has the capabilities of processing documents of wide range - Structured, semi-structured, Handwritten, low resolution, Unstructured and embedded images within documents

The key differentiators of Atos solution:

- Adaptive machine learning based solution to provide best accuracy to specific document type
- Hybrid architecture with machine learning, domain specific taxonomies and rules provide best-fit solution to specific domain problems

Client benefits

- Upto 80% cost saving against manual processing
- 80% reduction in processing lead-time
- Scalable, secure document processing service
- Minimum capex investment
- Unified solution for all document processing needs
- SLA driven automated document processing

Why Atos

- Atos has proven experience to provide high accuracy output in complex document scenarios with adaptive machine learning and post processing framework. Solution can be implemented rapidly with high ROI

Automated Orders Processing

Using Adaptive Post Processing



A German conglomerate company needed Intelligent document processing solution for transforming large volumes of purchase orders (pdf, images, html etc) into digital content 200K Orders per year need to be processed and Orders can be in multiple languages.

Multiple templates with variations and handwritten content can come in. System should be able process new templates without prior training or configuration

Business Context

- KPO Team uses a validation process to check on purchase orders and do manual entries. Based on feedback system should actively learn
- Complexity is in client specific post processing and complex layouts with multiple variations, Confidence score should be provided at category and entities level
- Taxonomy in multiple languages should be managed easily

Atos Solution

- Automated solution for fields extraction with image preprocessing using Azure cognitive service
- Adaptive post processing to handle profiles which are not trained, process complex table layouts, client/template specific post processing, auto-training/configuration to improve productivity
- End-to-end workflow that connects on-premises with cloud processes.
- Improves speed and accuracy of document processing, while reducing manual labor with help of confidence score for entities

Bill of Lading (BoL) - Smart Data Capture

High volume, Complex Documents Processing



Benefits:

75%

Reduction in document processing time

80%

Accurate extraction of data from documents

For large logistics provider, Atos developed a solution to eliminate the manual keying-in of BOL data and process the thousands of BOLs as they arrive in the service centers – Ensure reduction in cost of Operations. Key Solution highlights:

- Proven OCR engine for Data Capture
- Highly Available System
- End to End Orchestration engine
- Security by design
- Elastic capacity (For varying loads)
- Workflow to manage KPO operations

Business Context

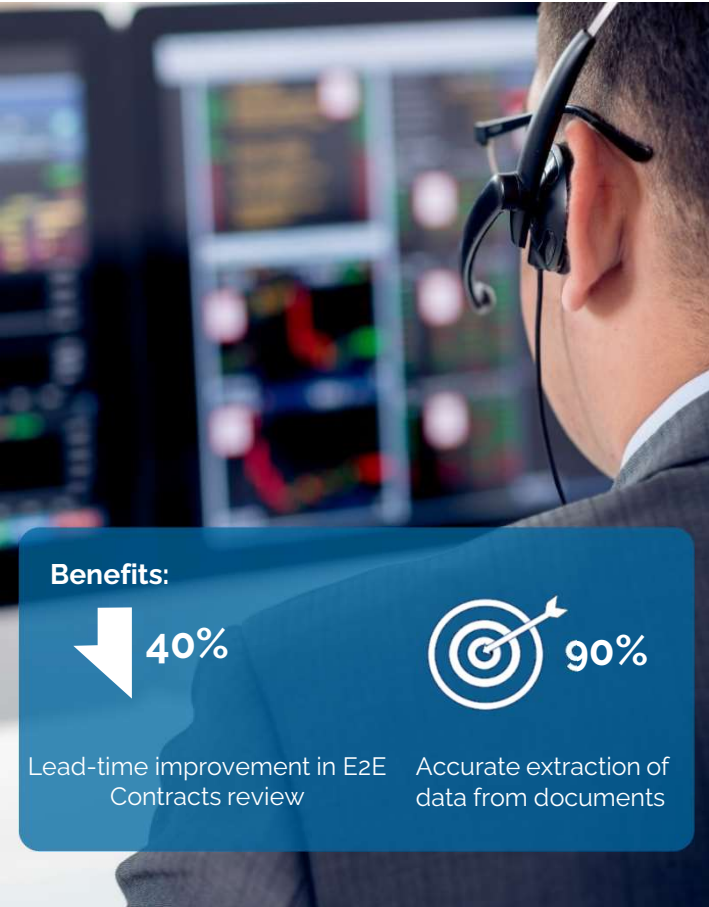
- Analyze BoL documents and extract meaningful information, act on the information and close the transaction (BOL documents contain handwritten content and have complex layouts with low dpi)
- Manual process in extracting the information from the documents and subsequent data entry into the downstream applications and close the transaction
- Thousands of documents per day backlog during holidays & special occasions

Atos Solution

- Develop a highly cost-optimized platform to process the BOLs documents
- Hybrid solution leveraging IDP solution with confidence scores & document classification
- Validation and auto-correction of text using advanced NLP techniques
- Offered mix of best of technology platforms and knowledge processing capabilities for value capture

Automation in Global Contract Review

Productivity improvement in risk management process



A global telecom giant needed an AI based cognitive solution that can reduce manual handling of contract documents and increase touch-less extension of business process.

Atos assisted the firm in extracting the essence of the contracts from key business standpoints. A scalable set of solutions that could tackle various contracts and convert them into summarized outcomes of significant information and business value.

Benefits:

 **40%**
Lead-time improvement in E2E Contracts review

 **90%**
Accurate extraction of data from documents

Business Context

- A great deal of effort was spent in processing and understanding contract documents by the client.
- Proper manual review and analysis of contracts were time consuming and error-prone, especially catering to a volume of contracts that vary in multiple types, structures, and sizes.

Atos Solution

- The solution provided was multifold: auto-extraction, auto-verification, and auto-comparison.
- Automatic extraction of key information from source contract document and creating a summary highlighting the key points, critical terms and conditions.
- Also extended to verifying concrete financial information and comparing them with other versions to ensure a robust due-diligence.