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From Data Deluge to Debt Recovery Triumph: Indium's AI Solution Boosts Efficiency 16x with 95% Accuracy

SUCCESS STORY

Overcoming Challenges in Extracting Information from Unstructured, Multilingual Documents!

Our client is a leading international debt recovery organization that collaborates with 117 law firms across 100+ countries and is known for its focus on fostering strong business relationships through out-of-court solutions. Their success hinges on efficiently processing a massive amount of data from diverse sources – legal documents, financial records, operational reports, due diligence materials, and performance metrics. These documents, often in multiple languages, formats, and currencies, arrived from scattered locations, creating a monumental challenge.

Their challenge? Extracting crucial information from these diverse, unstructured documents. Traditional tools like Textract and Cognizer offered limited solutions, mainly suited for single-page, straightforward data. Managing vast data fields within these complex legal and financial documents further complicated the process. Manually extracting this information was time-consuming and prone to errors.

The need for a more efficient and accurate solution was paramount. They needed a system that could handle:

Unstructured data:
Legal contracts, financial reports, due diligence files – these documents held valuable information, but their varied formats posed a challenge.

Multilingual support:
Operating in over 100 countries meant documents could arrive in any language. The ideal solution would seamlessly handle this multilingual environment.
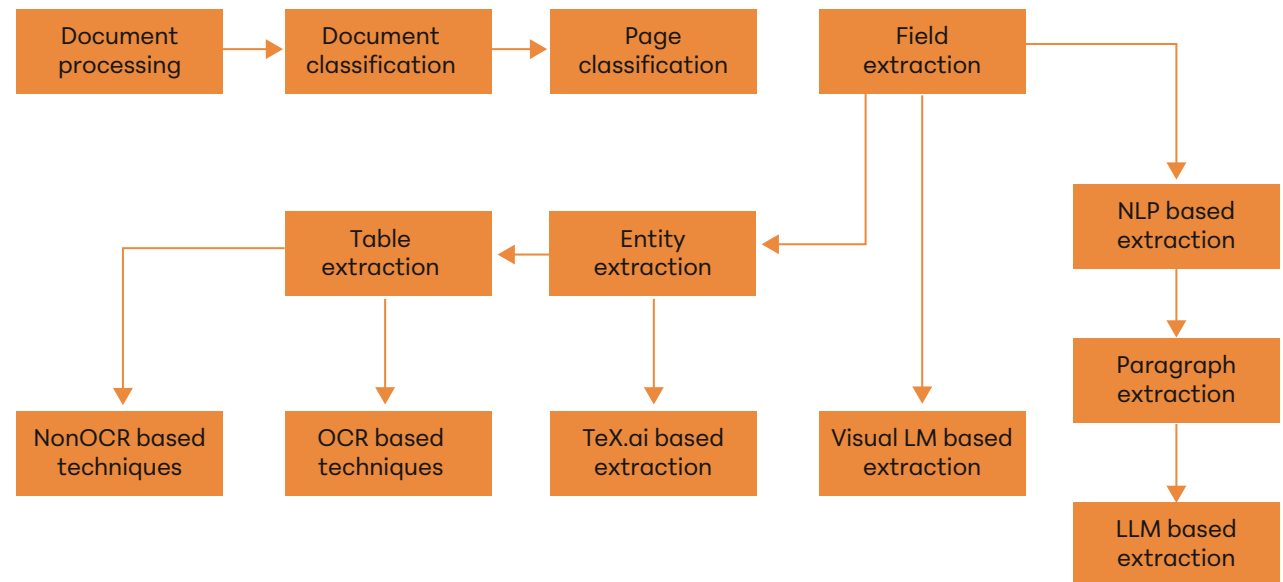
High data volume:
Managing 10,000+ positions and 73 million debts in just two years meant dealing with a massive volume of documents. Efficiency was key.

In short, this debt recovery leader needed a smarter way to unlock the hidden value within their documents, allowing them to focus on their core strength: recovering debts and building strong business relationships – all while maintaining the highest level of accuracy.

From Labyrinth to Efficiency: How Indium's Solution Empowered Our Client's Debt Recovery

Here's how Indium's solution transformed their data processing capabilities:

```
Document          Document          Page              Field
processing   →    classification →  classification    extraction ─────┐
                                                                       ↓
                                                                  NLP based
                        Table          Entity                    extraction
                        extraction ←   extraction ←──────┐            ↓
                            │              │             │       Paragraph
            ┌───────────────┤              │             │       extraction
            ↓               ↓              ↓             ↓            ↓
       NonOCR based    OCR based     TeX.ai based   Visual LM based  LLM based
       techniques      techniques    extraction     extraction       extraction
```

Indium's Tailored Approach: Advanced Text Extraction and Data Processing Techniques

▶ **Text Analytics with teX.ai and LLM:** We leveraged teX.ai, a preprocessor engine, along with a Large Language Model (LLM) trained on legal and financial documents. This combination extracted, summarized, and classified documents with high accuracy.

▶ **API-Based Extraction:** A Python OCR pipeline combined with an NLP pipeline was implemented to perform automated extraction through an API. This seamless integration fit perfectly with the client's existing documentation platform.

▶ **Document & Page Classification:** Our solution categorizes documents into predefined sets, such as legal, financial, operational, and due diligence. Additionally, pages were classified into specific categories like rent rolls or balance sheets, allowing for efficient organization and identification of relevant data.

▶ **LLM-Based Text Extraction:** The LLM is trained on massive datasets of legal and financial documents, and it extracts text by identifying patterns and generating matching text. This ensured accurate extraction even from complex documents.

▶ **TROCR/Detectron2 Table Extraction:** Open-source frameworks TROCR and Detectron2 were used to automate table extraction. They identified table cells and extracted the text within them, handling even complex tables.

Reaping the Rewards: Efficiency, Accuracy, and Data-Driven Decision Making

▶ **16x Faster Processing:** 60% of document extractions were automated, leading to a remarkable 16-fold reduction in processing time. Tasks requiring significant human intervention can now be completed in a fraction of the time.

▶ **Reduced Errors and Increased Accuracy:** Automation minimized human error, leading to 95% accuracy for basic entity extraction and 90-95% accuracy for medium and complicated files. This improvement in accuracy reduced rework and minimized compliance risks.

▶ **Deeper Insights, Informed Decisions:** The ability to extract data from 345 fields across 15 document types unlocked valuable insights for better analysis and decision-making, ultimately contributing to more informed business strategies.

▶ **Global Reach:** The multi-lingual model enabled seamless processing of documents in various languages, allowing the client to efficiently handle clients worldwide.

▶ **Data-Driven Culture:** Business teams now have access to accurate, up-to-date information, fostering a data-driven culture that supports informed decision-making.

▶ **Increased Agility:** Faster document processing and access to accurate information empower the company to respond quickly to market changes, customer demands, and emerging opportunities.

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About Indium

Indium is an AI-driven digital engineering company that helps enterprises build, scale, and innovate with cutting-edge technology. We specialize in custom solutions, ensuring every engagement is tailored to business needs with a relentless customer-first approach. Our expertise spans Generative AI, Product Engineering, Intelligent Automation, Data & AI, Quality Engineering, and Gaming, delivering high-impact solutions that drive real business impact.

With 5,000+ associates globally, we partner with Fortune 500, Global 2000, and leading technology firms across Financial Services, Healthcare, Manufacturing, Retail, and Technology—driving impact in North America, India, the UK, Singapore, Australia, and Japan to keep businesses ahead in an AI-first world.

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