



MAKING CONTRACT INTELLIGENCE FAST AND EFFICIENT

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Most businesses understand that effectively negotiating and managing contracts makes all the difference between profitable and unprofitable business relationships. Businesses grow by making “good deals”, and they suffer if they don’t. What most businesses do not know is how much value they lose when they fail to optimize those good deals. Good contract management is the basis for getting the most out of business relationships, but the key to good contract management is **contract intelligence**.

Why is contract intelligence so important? Because contract intelligence is central to every aspect of modern contract management, from creation to termination and everything that happens in between - negotiating terms, contract administration, obligation and compliance management, performance management, enforcement, renewal, and other activities. All those things depend on good contract intelligence.

Contract intelligence is the process of extracting essential information from contracts for contract management purposes. Traditionally this has been done by large staffs of legal analysts who spend lots of time manually reviewing contracts. They may have tools that tell them whose contracts are expiring when, but they still review those contracts for key terms. Although people are good at interpreting contracts, people are slow in reviewing them. Beatriz Peón, Head of Legal at group CMC, explains exactly why when she says, “I don’t use a tool to review and extract information from my contracts and other legal documents, but I wish I did. Instead I use the search function in Word.” That takes time, and it can be the source of errors. For many businesses, the task of manually performing rigorous contract analysis on an on-going basis is too costly, and many things get missed. **Slow, error-prone contract analysis is one of the biggest reasons for lost value** in otherwise good business relationships.

Businesses typically absorb that lost value, but how big are those losses? Although they vary with industry and the types of contracts, they are substantial. For example, recent research shows that over 95% of healthcare related contract analysis is done manually. Errors and costs associated with manually processing all those contracts is costing the healthcare industry \$157 billion per year. A big-four accounting firm estimates that companies routinely lose 17 to 40 percent of the value of their supplier contracts through

poor contract management. And JPMorgan Chase & Company saved 360,000 hours of contract review time in the first year, and reduced the number of loan servicing errors, after implementing an AI contract intelligence system to analyze commercial loan agreements.

HOW INEFFICIENT CONTRACT INTELLIGENCE LEADS TO ERRORS AND LOST VALUE

Managing contracts requires extracting names, dates, delivery schedules, payments, contingencies, options, performance clauses and many other details that relate to how the relationship operates. Most companies still do this contract analysis manually, using a large number of lawyers and contract administrators to mine contracts for relevant information. Although people are very good at interpreting contract language and finding essential information, the work is boring, time consuming, and fatigue inducing. When people become tired, they make mistakes. These are the mistakes that cause a great many contract management errors. The most common costs to the business include:

- **Lost time spent reviewing contracts** – Contract and document review is necessary for answering contract questions that arise during the normal course of business. Sometimes answering the simplest questions requires considerable contract analysis. That time is costly, and it can delay higher value business initiatives.
- **Missed opportunities** – Many contracts contain renewal incentives such as favorable rates if the contract is renewed within a certain time prior to contract end date. Failure to notice that detail in a timely manner frequently results in lapses and higher rates. Other details often missed are added value services that were part of the original agreement. They may have helped establish the business relationship but are later forgotten because they are not the core deliverable. If contract analysis misses those terms and the business partner neglects to deliver on that part of the agreement, there is lost value in that relationship.



- **Missed performance milestones** – Uncertainty about milestone deadlines and other contract details, and not having the ability to quickly determine what those are, can result in missed deadlines that delay revenue, incur penalties, and result in other unanticipated costs.
- **High error rates when dealing with large volumes of contracts** – High volume application and contract analysis for credit or other services is tedious work that is susceptible to error. These kinds of errors can cost the loss of potential business, or they can result in inaccurate risk assessment.
- **Compliance violations that result in regulatory penalties** – Contracts that operate within a regulatory framework must comply with the rules. Failure to recognize the relationship between compliance requirements and contract terms can result in large penalties.
- **Overreliance on automatic contract renewals** – To ease the burden of time-consuming contract analysis, it is a common practice to set up automatically renewing contracts. Although this takes the load off those tasked with reviewing contracts, it also results in missed opportunities to negotiate better contract terms.
- **Time spent and errors made in very complex contracts** – Complex contract situations, such as mergers and acquisitions, require analysis of many contractual relationships and understanding all the business dependencies relevant to M&A agreements. This involves digging into contracts with varying language and making assessments about the completeness contracts. It is a costly process, and mistakes can be expensive.

With all these potential problems, the cost of manual contract analysis and associated inaccuracies are significant. Petteri Miinalainen, CIO at Fennia, envisions the possibilities of avoiding these project management pitfalls that result from poor contract intelligence. He says, “It would be great to have a tool that draws out SLAs, term lengths, monetary values, and sanctions, and also to have a broader analytical workspace where contract values would be mirrored against realized costs. Also, if there could be correlation with wording in documents on either side of a negotiation.”

So, what's the answer?

AI-DRIVEN NATURAL LANGUAGE UNDERSTANDING (NLU)

Manual contract analysis will always be limited by the speed, stamina, and cost of the people doing that work. One solution that is increasingly part of contract management workflow is AI-based contract intelligence. Some of these solutions have shown impressive results when tested against or in combination with humans doing the same work, or when applied to certain kinds of contract scenarios, such as handling large volumes of credit applications.

Most AI-based contract analysis solutions use algorithms that parse contracts for specific types of language and terms. This works to a reasonable extent if the documents are structured or semi-structured contracts (as forms or standard documents) due to their similarities in structure and use of language. They are more challenged by a mix of contract types using different language to describe similar things. In those situations, the algorithms need more and more text to improve their accuracy. This requires more data and more computer processing power. At some point the cost of processing enormous amounts of text outweighs the value of incremental gains in accuracy.

A different approach to Natural Language Understanding (NLU) is called Semantic Folding. It turns text into "patterns" of meaning. Text comparison becomes a process of pattern matching and pattern differentiation, which is similar to how the human brain interprets language.

Semantic Folding creates semantic fingerprints which are much more effective at interpreting linguistic ambiguity and matching meaning, even when different words are used to describe the same thing. Additionally, systems based on semantic fingerprints can be implemented much more quickly. All language processing systems require training, but NLU with semantic fingerprints makes it possible to train the system with much less content and does not require AI experts. The system learns by ingesting a comparatively small number of documents and working with subject matter experts who teach it desired

outcomes. It continues learning based on new ingested data and corrections made by users of the system.

So how does it work in practice? Let's look at a few actual use cases.

TWO NLU USE CASES

Consider the following two examples. Both of them involve semantic interpretation that is difficult for traditional text analytics algorithms, and they both have significant value implications for the businesses:



- **Extracting lease agreement details from thousands of leases** – New international and US lease accounting standards (IFRS 16 and ASC 842) led a large accounting firm to help its clients disclose certain lease agreement information on their books as they were now required to do. This involved analyzing thousands of non-standardized lease agreements that caused keyword-based analytics systems to deliver poor results. Using NLU-based contract intelligence application from Cortical.io, the company was able to quickly create extraction models from just 50 sample contracts. The system extracted and classified necessary information far faster than could be done with manual analysts, resulting in an 80% reduction in extraction time.



- **Comparing insurance carrier contracts** – A major insurance carrier receives a large number of quote requests every year from businesses considering changing carriers. It is a common practice for businesses to revisit the insurance coverage they provide their employees, to make sure they are getting the best deal for their coverage. Whenever the insurance carrier receives a request for a quote from a business, they must compare that business's existing contracts to the ones they offer so that they can show where their coverage is the same, and where it differs. This typically involves reviewing and comparing multiple contracts for each quote. The contract analysis involved in processing these quote requests each year is enormous.

This insurance carrier is in the process of adopting Cortical.io Contract Intelligence which reduces the time required to analyze these contracts, and improves accuracy. The system uses Semantic Folding to make accurate inferences about contract provisions, even when different wording is used to describe a term or provision, and it correlates terms distributed throughout the contract.

WHAT TO LOOK FOR IN A CONTRACT INTELLIGENCE SOLUTION

Good contract intelligence supercharges contract management by taking information extraction to a new level of speed and accuracy. NLU-based contract intelligence overcomes many of the problems experienced by users of traditional text analytics solutions: difficult implementation and unsatisfactory results. That's because most natural language processing solutions rely on text analytics algorithms. This makes a big difference in the time it takes to train the system (Semantic Folding is faster), the computing resources needed to run it (Semantic Folding is a much more efficient language processing system), and operational accuracy (Semantic Folding performs better at scale and handles much more complex semantic challenges, including multi-lingual use cases).

When searching for a contract intelligence solution, one major consideration is how the system learns. As with all systems that use artificial intelligence, NLU-based contract intelligence requires training, and training is a continuous process. Mile Naskovski, Senior Business Analyst at Katoen Natie, describes it this way: "The feeding of AI with rules is a process that never ends. It requires monitoring results, spotting issues, and thinking of solutions to those problems without negatively affecting the overall system accuracy." Key criteria when choosing a system involve training and operation. As you evaluate NLU solutions, look for these essential capabilities:

- Easy implementation and rapid training using small sample sets;
- Continuous learning through interaction with real contract analysts using the system;

- No AI expertise required to implement and operate the system;
- Multi-lingual capabilities - even if you don't need it right away;
- Integration with other contract management tools.

Many contract management operations have been slow to adopt contract intelligence solutions because of poor performance, or they have built a proprietary tool to handle just their specially structured documents, or they do not believe the volume of their analysis work warrants the investment. Contract Intelligence from Cortical.io is changing conventional wisdom about contract intelligence. It's worth a closer look.

To learn more about Contract Intelligence from Cortical.io, go to <https://www.cortical.io> or contact info@cortical.io.