akorda

Artificial Intelligence In Contract Lifecycle Management

An Akorda White Paper

Introduction:

Contracts and Playbooks

01. What are Contracts?

02. What are Playbooks?

01
What are Contracts?

Contracts are the lifeblood of any modern business. Yet, a contract is also a complex communicative act, often involving hard to understand legal language and a friction-filled process to get to a final agreement. Many executives both in the business and in the legal domain regard our system of contracting as broken.

Contracts are often portrayed as just a bag of words, filled with landmines, not consulted until things go wrong. This is further supported by a report from the International Association for Contract and Commercial Management (IACCM) on The Future of Contracting [2] highlighting many distressing themes:
Contracting is often a source of complexity, rather than a cure for it.

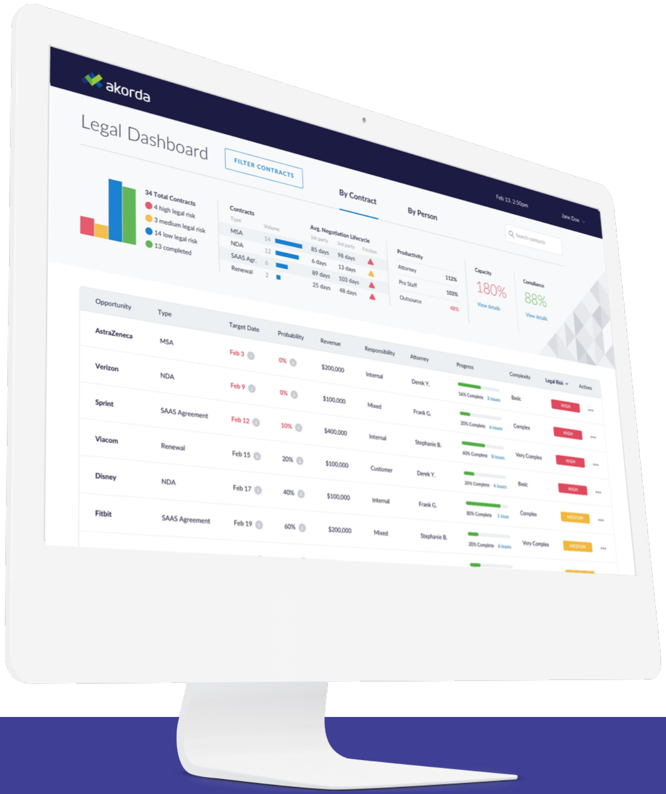
Contracts are “dead” instruments when we need living ones. They are not designed to accommodate changing circumstances. Contracts are viewed as static documents, rather than objects that embody live and enforceable relationships. They are opaque and inaccessible.

As Marc Lauritsen insightfully observed in [1]:
"Contract formation is often a wasteful and disruptive process, mired in bad habits rather than driven by quality and innovation".

Contract management systems and processes often focus on individual transactions rather than portfolios of rights, obligations, and commitments. In short, our systems of contracting are antiquated and extremely inefficient, thus prime for disruption.

Our system of contracting is broken.
We need a better system, a better way.

We need systems that not only help us ascertain when contracts are being followed but when they need to be changed. Smart contracting platforms help the parties perform their obligations and alert them to potential issues and hidden risks. We need systems that are accessible, transparent, agile, and aligned with genuine business strategy.



34 Total Contracts
● 4 high legal risk
● 3 medium legal risk
● 14 low legal risk
● 13 completed

Contracts

Type	Volume	Avg. Negotiation Lifecycle 1st party	3rd party	Friction
MSA	14	85 days	98 days	▲
NDA	12	6 days	13 days	▲
SAAS Agr.	6	89 days	103 days	▲
Renewal	2	25 days	48 days	▲

Productivity

Attorney	112%
Pro Staff	103%
Outsource	48%

Capacity 180% View details

Compliance 88% View details

Opportunity	Type	Target Date	Probability	Revenue	Responsibility	Attorney	Progress	Complexity	Legal Risk	Actions
AstraZeneca	MSA	Feb 3	0%	$200,000	Internal	Derek Y.	56% Complete 3 issues	Basic	HIGH	•••
Verizon	NDA	Feb 9	0%	$100,000	Mixed	Frank G.	20% Complete 6 issues	Complex	HIGH	•••
Sprint	SAAS Agreement	Feb 12	10%	$400,000	Internal	Stephanie B.	60% Complete 8 issues	Very Complex	HIGH	•••
Viacom	Renewal	Feb 15	20%	$100,000	Customer	Derek Y.	20% Complete 4 issues	Basic	HIGH	•••
Disney	NDA	Feb 17	40%	$100,000	Internal	Frank G.	80% Complete 1 issue	Complex	MEDIUM	•••
Fitbit	SAAS Agreement	Feb 19	60%	$200,000	Mixed	Stephanie B.	20% Complete 6 issues	Very Complex	MEDIUM	•••

02
What are Playbooks?

As defined by Sterling Miller in [3], “A Contract Playbook is a document that, in some fashion, breaks down the company’s standard contract terms, sets out an explanation of each clause along with fallback clauses (i.e., variations of the standard clauses that the company would accept if the customer wants to negotiate a standard clause), and notes when the company will “walk away” from a contract.” While companies want to sell their products or services to as many customers as possible, they will only do so to the extent the contract makes sense to the company both financially and legally (e.g., acceptable limitations of liability). In a nutshell, a properly prepared contract playbook is an evergreen document that:

- ✓ Allows the legal and business teams to stay aligned and close contracts faster
- ✓ Optimize the use of attorneys and leverage a larger team for the review
- ✓ Define methods for legal decision making

As observed by Marc Lauritsen in [1]: “Playbooks are widely used by lawyers and other professionals to guide the drafting and negotiation of contracts. They embody preferred terms and texts, including acceptable fallback alternatives and recommended processes for settling business deals. They are rich sources of knowledge and guidance. Yet, even when digitally delivered, in few organizations are playbooks interactive or ‘smart’.”

Typically there are different playbooks for different uses and document types, e.g. 'Sales' and a SaaS agreement vs. 'Purchasing' and a Master Services Agreement. Optimized contract playbooks ensure consistency in contract terms. They further accelerate deals through the elimination of friction points, reduce administration costs, and better manage risk in contract portfolios. Companies that do not have playbooks could greatly benefit from the use of Artificial Intelligence (AI) to create them *automatically* from all the contracts they have already negotiated.

In this white paper, we explore a state-of-the-art tool: **Akorda**, that applies Artificial Intelligence (AI) to the art of following the playbook and aiding contract negotiation beyond what has been seen in the Contract Lifecycle Management (CLM) market today, paving the way for *the future of contracting* [4].

Introduction:

Contracts Analytics

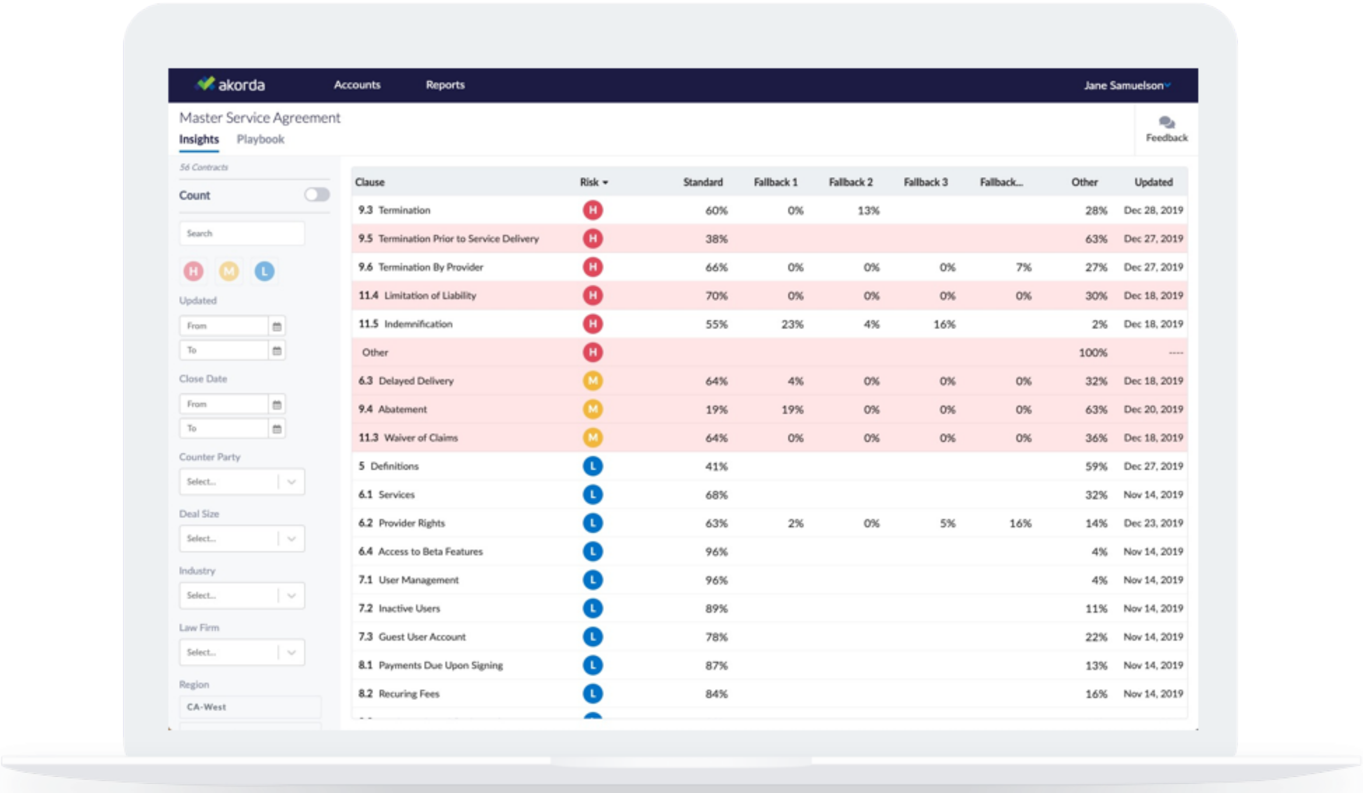
01. Reporting on Deviations in Contracts

02. Creating and Maintaining Playbooks

03
Reporting on Deviations in Contracts

Imagine a world where you had full knowledge of all of your contracts and more importantly all the ways you have deviated from your standard terms. The ability to understand what you have agreed to across all your contracts is very powerful and lacking in today's Contract Lifecycle Management (CLM) market.

That is until now. Akorda is a tool that can be used to mine and analyze a set of existing executed contracts by a company so as to report on deviations from standard terms.



Clause	Risk	Standard	Fallback 1	Fallback 2	Fallback 3	Fallback...	Other	Updated
9.3 Termination	H	60%	0%	13%			28%	Dec 28, 2019
9.5 Termination Prior to Service Delivery	H	38%					63%	Dec 27, 2019
9.6 Termination By Provider	H	66%	0%	0%	0%	7%	27%	Dec 27, 2019
11.4 Limitation of Liability	H	70%	0%	0%	0%	0%	30%	Dec 18, 2019
11.5 Indemnification	H	55%	23%	4%	16%		2%	Dec 18, 2019
Other	H						100%	----
6.3 Delayed Delivery	M	64%	4%	0%	0%	0%	32%	Dec 18, 2019
9.4 Abatement	M	19%	19%	0%	0%	0%	63%	Dec 20, 2019
11.3 Waiver of Claims	M	64%	0%	0%	0%	0%	36%	Dec 18, 2019
5 Definitions	L	41%					59%	Dec 27, 2019
6.1 Services	L	68%					32%	Nov 14, 2019
6.2 Provider Rights	L	63%	2%	0%	5%	16%	14%	Dec 23, 2019
6.4 Access to Beta Features	L	96%					4%	Nov 14, 2019
7.1 User Management	L	96%					4%	Nov 14, 2019
7.2 Inactive Users	L	89%					11%	Nov 14, 2019
7.3 Guest User Account	L	78%					22%	Nov 14, 2019
8.1 Payments Due Upon Signing	L	87%					13%	Nov 14, 2019
8.2 Recuring Fees	L	84%					16%	Nov 14, 2019

It does so by:

Importing:

- ✓ Previously executed contracts
- ✓ A contract template
- ✓ A playbook (if available)

Applying advanced Legal Natural Language Processing (NLP) to:

- ✓ Classify contracts by type
- ✓ Segment contract documents into clauses
- ✓ Extract Key Entities and Terms

Automatically analyzing each set of contracts per document type to:

- ✓ Identify what contracts clauses have deviated from the standard
- ✓ Classifying deviations as one of the fallbacks in a playbook or outside the playbook
- ✓ Leveraging heading and clause classification technologies
- ✓ Using a measurement of contextual semantic similarity to improve the analysis

04
Creating and Maintaining Playbooks

In actual review and negotiation of contracts, parties will often encounter versions of clauses that don't exactly match those in their playbooks. Managing playbook content typically requires continuous review of executed language and frequent updates to the company playbooks. This is a time consuming and expensive process leading to playbooks becoming stale and out of date with company norms.

With the help of Akorda, one is able to quickly recognize the clause revisions that fall outside of the existing playbook, identify common patterns of customer requests and formulate new standard fallbacks. One does this by applying non-supervised learning (clustering) techniques to identify hidden clusters. With humans in the loop, a user can then select and edit a newly identified cluster as a new fallback position or as a standard text of a whole new clause.

There is now a way to automatically create playbooks from a set of executed contracts.

Using AI, Akorda can reverse engineer a playbook and fully automate the time-consuming manual process of playbook creation. In order to facilitate the ongoing evolution of a playbook, modern data-driven tools and processes are required. As a playbook evolves, changes to clause language and guidance need to be tracked with granular version control. Executed contracts can be associated with playbook and clause versions used at the time of negotiation.

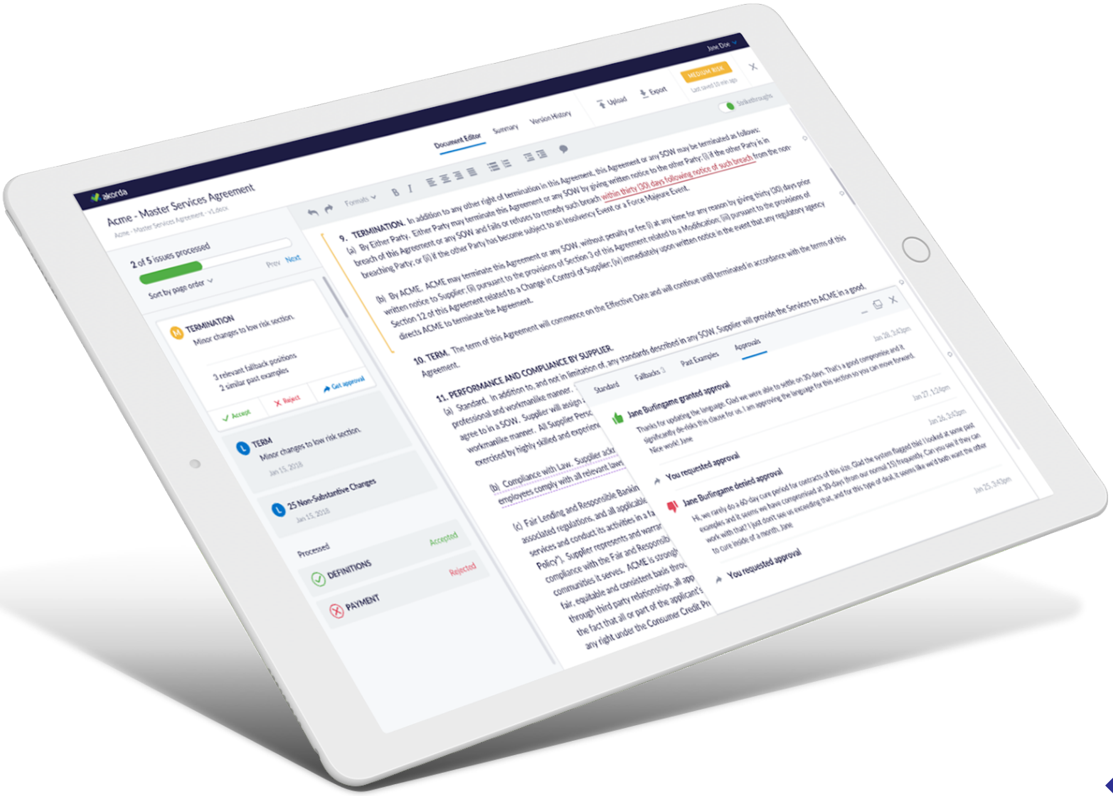
Contracts Negotiation and Review

05. Matching Contract Changes (Redlines) to Playbook Issues

06. Predicting Risk During Contract Negotiation

05
Matching Contract Changes (Redlines) to Playbook Issues

Akorda provides a contract negotiation platform that integrates the playbook directly into the negotiated contract. When a contract change has been proposed by another party (an issue), Akorda characterizes the request in relation to the standard by suggesting the nearest matches to the issue already present in the playbook. Reviewers can accept the suggestion or search through the playbook for matching content. The matching of contract changes (a.k.a. redlines) to known customer issues allows the reviewer to accept, reject or negotiate language with confidence that the changes they suggest conform to the corporate positions laid out in the playbook; all without ever leaving the contract.



9. TERMINATION. In addition to any other right of termination in this Agreement, this Agreement or any SOW may be terminated as follows:
(a) By Either Party. Either Party may terminate this Agreement or any SOW by giving written notice to the other Party: (i) if the other Party is in breach of this Agreement or any SOW and fails or refuses to remedy such breach within thirty (30) days following notice of such breach from the non-breaching Party; or (ii) if the other Party has become subject to an Insolvency Event or a Force Majeure Event.

(b) By ACME. ACME may terminate this Agreement or any SOW, without penalty or fee (i) at any time for any reason by giving thirty (30) days prior written notice to Supplier; (ii) pursuant to the provisions of Section 3 of this Agreement related to a Modification; (iii) pursuant to the provisions of Section 12 of this Agreement related to a Change in Control of Supplier; (iv) immediately upon written notice in the event that any regulatory agency directs ACME to terminate the Agreement.

10. TERM. The term of this Agreement will commence on the Effective Date and will continue until terminated in accordance with the terms of this Agreement.

11. PERFORMANCE AND COMPLIANCE BY SUPPLIER.
(a) Standard. In addition to, and not in limitation of, any standards described in any SOW, Supplier will provide the Services to ACME in a good, professional and workmanlike manner.
agree to in a SOW. Supplier will assign a
workmanlike manner. All Supplier Pers
exercised by highly skilled and experien

(b) Compliance with Law. Supplier ack
employees comply with all relevant laws

(c) Fair Lending and Responsible Bankin
associated regulations, and all applicable
services and conduct its activities in a fa
Policy"). Supplier represents and warran
compliance with the Fair and Responsib
communities it serves. ACME is strongl
fair, equitable and consistent basis throu
through third party relationships, all app
the fact that all or part of the applicant's
any right under the Consumer Credit Pr

Jan 28, 3:43pm
Thanks for updating the language. Glad we were able to settle on 30-days. That's a good compromise and it significantly de-risks this clause for us. I am approving the language for this section so you can move forward. Nice work! Jane

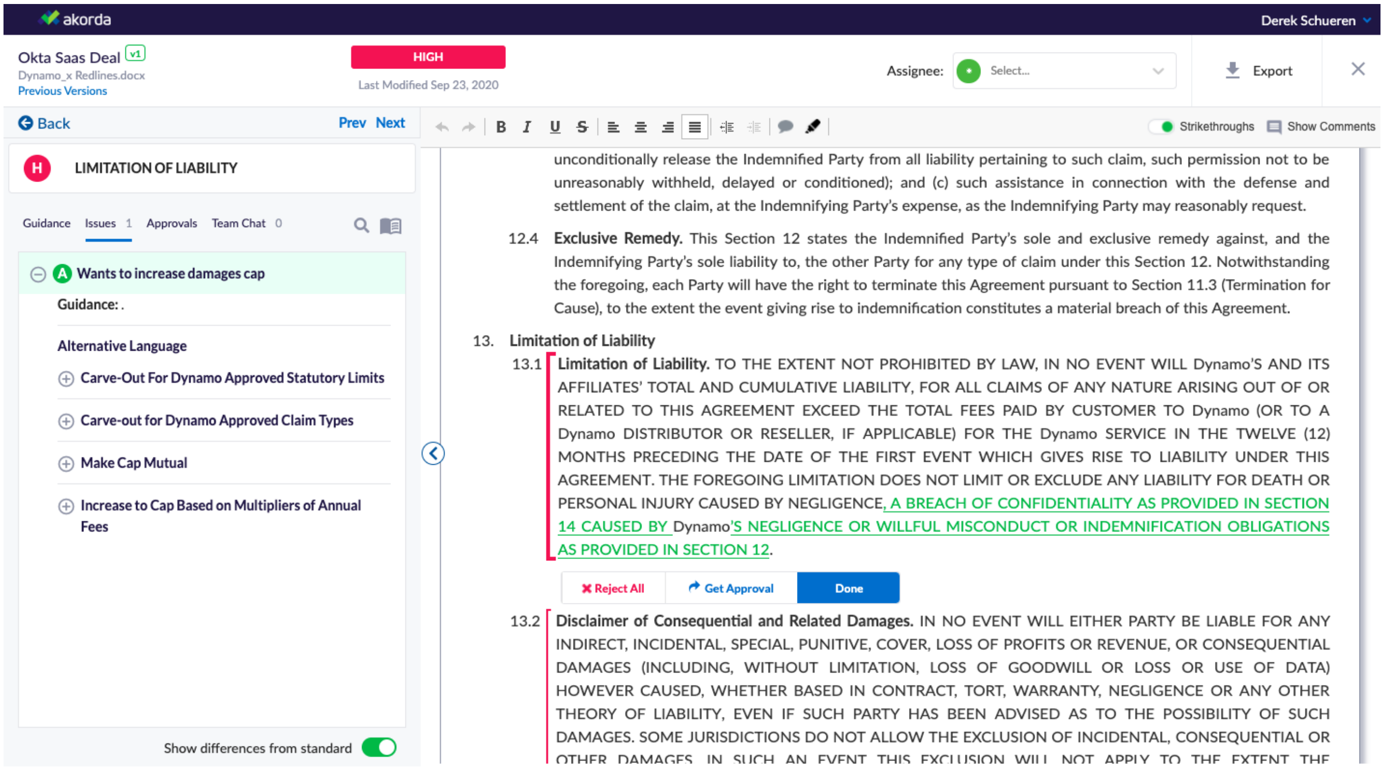
Jane Burlingame granted approval
Jan 27, 1:24pm

You requested approval
Jan 26, 3:43pm

Jane Burlingame denied approval
Hi, we rarely do a 60-day cure period for contracts of this size. Glad the system flagged this! I looked at some past examples and it seems we have compromised at 30-days (from our normal 15) frequently. Can you see if they can work with that? I just don't see us exceeding that, and for this type of deal, it seems like we'd both want the other to cure inside of a month. Jane
Jan 25, 3:43pm

You requested approval

This process is facilitated by advanced Legal Natural Language Processing (NLP) to understand the nature of the change and match it with the issue(s) that are the closest in meaning to the redline or identify a newly added text that does not match with any known fallback or clause.



Wants to increase damages cap

Guidance: .

Alternative Language

- Carve-Out For Dynamo Approved Statutory Limits
- Carve-out for Dynamo Approved Claim Types
- Make Cap Mutual
- Increase to Cap Based on Multipliers of Annual Fees

unconditionally release the Indemnified Party from all liability pertaining to such claim, such permission not to be unreasonably withheld, delayed or conditioned); and (c) such assistance in connection with the defense and settlement of the claim, at the Indemnifying Party's expense, as the Indemnifying Party may reasonably request.

12.4 **Exclusive Remedy.** This Section 12 states the Indemnified Party's sole and exclusive remedy against, and the Indemnifying Party's sole liability to, the other Party for any type of claim under this Section 12. Notwithstanding the foregoing, each Party will have the right to terminate this Agreement pursuant to Section 11.3 (Termination for Cause), to the extent the event giving rise to indemnification constitutes a material breach of this Agreement.

13. Limitation of Liability

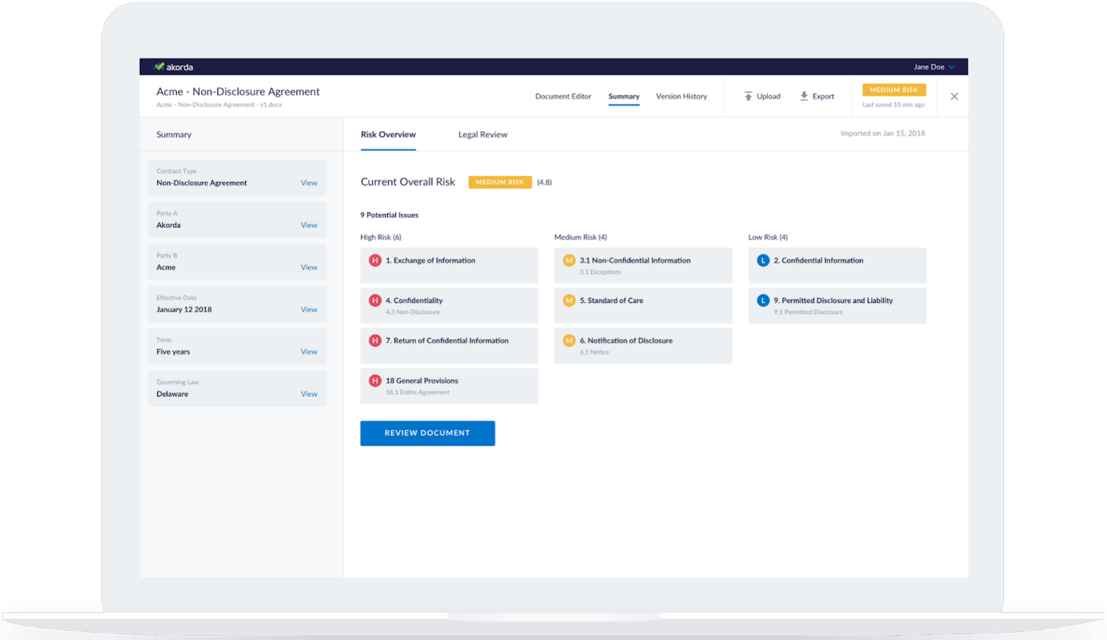
13.1 **Limitation of Liability.** TO THE EXTENT NOT PROHIBITED BY LAW, IN NO EVENT WILL Dynamo'S AND ITS AFFILIATES' TOTAL AND CUMULATIVE LIABILITY, FOR ALL CLAIMS OF ANY NATURE ARISING OUT OF OR RELATED TO THIS AGREEMENT EXCEED THE TOTAL FEES PAID BY CUSTOMER TO Dynamo (OR TO A Dynamo DISTRIBUTOR OR RESELLER, IF APPLICABLE) FOR THE Dynamo SERVICE IN THE TWELVE (12) MONTHS PRECEDING THE DATE OF THE FIRST EVENT WHICH GIVES RISE TO LIABILITY UNDER THIS AGREEMENT. THE FOREGOING LIMITATION DOES NOT LIMIT OR EXCLUDE ANY LIABILITY FOR DEATH OR PERSONAL INJURY CAUSED BY NEGLIGENCE, A BREACH OF CONFIDENTIALITY AS PROVIDED IN SECTION 14 CAUSED BY Dynamo'S NEGLIGENCE OR WILLFUL MISCONDUCT OR INDEMNIFICATION OBLIGATIONS AS PROVIDED IN SECTION 12.

13.2 **Disclaimer of Consequential and Related Damages.** IN NO EVENT WILL EITHER PARTY BE LIABLE FOR ANY INDIRECT, INCIDENTAL, SPECIAL, PUNITIVE, COVER, LOSS OF PROFITS OR REVENUE, OR CONSEQUENTIAL DAMAGES (INCLUDING, WITHOUT LIMITATION, LOSS OF GOODWILL OR LOSS OR USE OF DATA) HOWEVER CAUSED, WHETHER BASED IN CONTRACT, TORT, WARRANTY, NEGLIGENCE OR ANY OTHER THEORY OF LIABILITY, EVEN IF SUCH PARTY HAS BEEN ADVISED AS TO THE POSSIBILITY OF SUCH DAMAGES. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OF INCIDENTAL, CONSEQUENTIAL OR OTHER DAMAGES. IN SUCH AN EVENT THIS EXCLUSION WILL NOT APPLY TO THE EXTENT THE

06
Predicting Risk During Contract Negotiation

Once a change has been correctly mapped to a given issue in the playbook, Akorda uses key extracted legal entities and business terms along with the contract and clause metadata to predict the potential risks that the change represents for the company.

Akorda accomplishes this through the application of Machine Learning (ML) and NLP to the problem of understanding the impact of the change. It compares the change to the standard contract language playbook fallback positions as well as the implications that are derived from the context of the proposed changes and not by simply counting the number of words changed.



Acme - Non-Disclosure Agreement
Acme - Non-Disclosure Agreement - v1.docx

Imported on Jan 15, 2018

Contract Type	Non-Disclosure Agreement	View
Party A	Akorda	View
Party B	Acme	View
Effective Date	January 12 2018	View
Term	Five years	View
Governing Law	Delaware	View

Current Overall Risk MEDIUM RISK (4.8)

9 Potential Issues

High Risk (6)	Medium Risk (4)	Low Risk (4)
H 1. Exchange of Information	M 3.1 Non-Confidential Information 3.1 Exceptions	L 2. Confidential Information
H 4. Confidentiality 4.3 Non-Disclosure	M 5. Standard of Care	L 9. Permitted Disclosure and Liability 9.1 Permitted Disclosure
H 7. Return of Confidential Information	M 6. Notification of Disclosure 6.1 Notice	
H 18 General Provisions 18.1 Entire Agreement		

Appendix: Technology Review

07
Technology Preview

With the rapid development of Deep Neural Networks applied to many supervised and unsupervised learning tasks, the machine learning (ML) and natural language processing (NLP) community have developed a representation of textual data called text embedding that encodes words and sentences as numeric vectors, which in turn can be used inside search engines, such as ElasticSearch, to compute text similarity [5] between a query and documents.

In a nutshell an embedding is a mapping of text or a categorical variable into a lower dimensional space, typically produced by an intermediate layer of a complex neural network trained with a task in mind. The encoded vectors are dense and relatively low-dimensional, often ranging from 100 to 1,000 dimensions, whereas traditional Information Retrieval (IR) inspired vector-space encoding of text as bag-of-words or TF-IDF vectors are sparse and can comprise 50,000+ dimensions.

These vector representations are designed to capture the linguistic content of the text and can be used to assess the similarity between two text fragments such as words or sentences. Embedding algorithms encode the text into a lower-dimensional space as part of modeling its semantic meaning. Ideally, synonymous words and phrases end up with a similar representation in the new vector space. They are not commonly used to represent text longer than a short paragraph.

08
Sentence Embeddings

The first embedding representations of text were generated at the word level with Word2vec. More recently, researchers have started to focus on contextual embedding techniques that represent not only words but longer sections of text such as sentences. For example, they take the order of words into account when determining the vector representation. For example, the phrase "tune in" may be mapped as a very different vector than "in tune”.

Some common sentence embedding techniques include InferSent, Universal Sentence Encoder, ELMo, and BERT and Sentence-BERT (or SBERT). These models have been trained on large datasets, saved, and then used for solving other tasks. That’s why pre-trained sentence embeddings are a form of Transfer Learning. Once trained, the models are able to take a sentence and produce a vector for each word in context, as well as a vector for the entire sentence. Pre-trained versions of these models are available, allowing users to skip the expensive training process. While the training process can be very resource-intensive, invoking the model is much more lightweight — sentence embedding models are typically fast enough to be used as part of real-time applications.

Akorda has further advanced the state-of-the-art by using embeddings for NLP of legal contracts. This is achieved by fine-tuning pre-trained sentence embedding models for tasks such as legal and business entity extraction, contract and clause classification, clause and sentence segmentation, and sentence-to-issue matching.

This creates an enriched language model that hopefully represents more accurately the semantic similarity that can be used for applications such as *semantic clause matching* in contracts or to compute the relatedness between the text in a redline and the text that represents a given fallback.

References and Additional Resources

1. Enhancing Contract Playbooks with Interactive Intelligence—Part I The Journal of Robotics, Artificial Intelligence & Law Volume 1, No. 5 | September–October 2018
2. IACCM Report on "The Future of Contracting" (2012)
3. Ten Things: Creating a Good Contract Playbook
4. NCMA Report on "Preparing for the Future of Contracting"
5. Text similarity search with vector fields