Traditional vs. Computer-Aided Due Diligence

*What is the best way to review contracts for due diligence or contract management purposes?*

Today, most contract review gets done by junior lawyers reading contracts page by page. This process is time consuming and prone to human error. We think we've built a better way to do this work. Our software reads contracts for user-specified provisions (e.g., change of control, assignment, term), puts its findings into summary charts, and includes workflow tools to help users refine this information.

How would a lawyer using it stack up against one reviewing contracts the traditional way? We tested it out. Here's what we found:

> An experienced lawyer using **DiligenceEngine was significantly faster and more accurate** than an experienced lawyer doing diligence the traditional way.
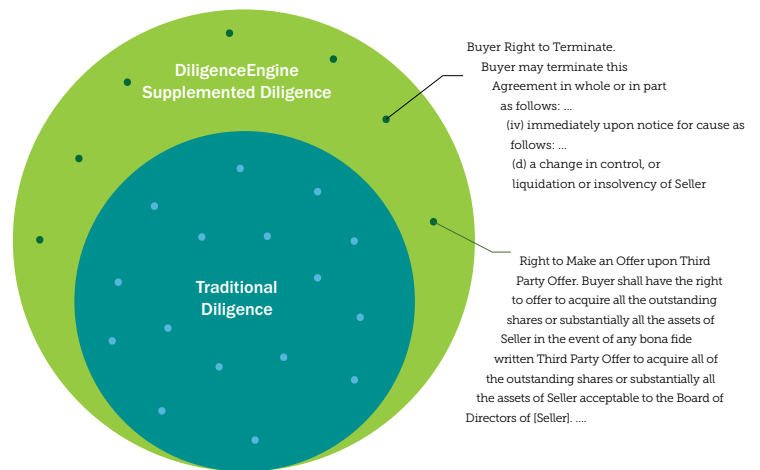
SPEED

The system-user completed the review in **20–30% less time** even when he still read-through every agreement and close to **60% less time** when he only spot checked system results. Both ways were more accurate than traditional review.
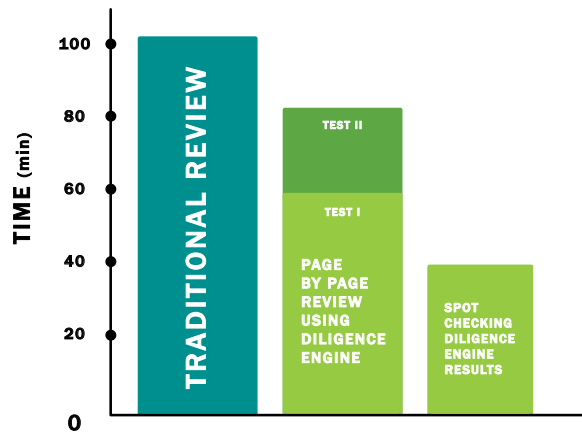
ACCURACY

The system identified a number of significant change of control clauses the non-user missed, including a termination-on-change-of-control provision. In one test, the non-user identified **7 of the 12** substantive change of control provisions the system user got (and nothing the system user missed).

Buyer Right to Terminate. Buyer may terminate this Agreement in whole or in part as follows: …
   (iv) immediately upon notice for cause as follows: …
      (d) a change in control, or liquidation or insolvency of Seller

Right to Make an Offer upon Third Party Offer. Buyer shall have the right to offer to acquire all the outstanding shares or substantially all the assets of Seller in the event of any bona fide written Third Party Offer to acquire all of the outstanding shares or substantially all the assets of Seller acceptable to the Board of Directors of [Seller]. ….

Testers

* DiligenceEngine user Noah
  (our co-founder & CEO)

* 4 years as a corporate associate at a top international law firm, 2.5 years at DiligenceEngine

* 2006 NYU J.D.

* Non-user "Tom"

* 3 years as a corporate associate at a top international law firm, 3 years in-house at a financial services company

* 2006 top ten law school J.D.

Test I

Ten agreements (about 330 pages total)

Provisions Covered: title, parties, date, term, assignment, change of control, governing law, *exclusivity, most favored nation, non-competition, non-solicitation* (*italicized* provisions not yet covered by system).

Why review for provisions not covered by system? DiligenceEngine does not yet cover every provision potentially needed in a review. However, we add new provisions over time and the system includes workflow tools to improve manual review. This test partially measured whether the system would help on uncovered provisions.

Speed:
Tom took 236 minutes to review all contracts. Noah, aided by the system and reading every document page by page, completed his review in 159 minutes.

Accuracy:
The system and Noah caught a termination on change of control provision Tom missed:

> [Buyer] Right to Terminate.
> [Buyer] may terminate this Agreement in whole or in part as follows:
>
> ...
>
>   (iv) immediately upon notice for cause as follows:
>
> ...
>
>   (d) a change in control, or liquidation or insolvency of [Seller]

Tom did not find any substantive provisions the system or Noah missed.

Test II

Six agreements (about 270 pages total)

Provisions Covered: title, parties, date, term, assignment, change of control, amendment, governing law.

Speed:
Tom completed his review in 100 minutes. Noah reviewed the documents page by page in 81 minutes. A few hours later, Noah reviewed the same documents a second time, primarily targeting speed. In this review, he only spot checked system results and deleted false positives. He finished in 41 minutes.

Accuracy:
Both times Noah went through the agreements, he and the system found 12 clear change of control provisions. The non-user found seven. Here's one of the provisions Tom missed:

> Right to Make an Offer upon Third Party Offer. [Buyer] shall have the right
> to offer to acquire all the outstanding shares or substantially all the assets of [Seller]
> in the event of any bona fide written Third Party Offer to acquire all of the
> outstanding shares or substantially all the assets of [Seller] acceptable to the Board
> of Directors of [Seller]. ....

General characteristics: All agreements reviewed were fresh to both reviewers and the DiligenceEngine system. They were US law governed contracts sourced from EDGAR. Reviewers completed templates that had been provided in advance. Reviewers had reasonable disagreements on some provisions; only clear and substantive provision misses were discussed above.

Potential Limitations of Results

* Noah reviewed the same documents twice in Test II. While he did not change any findings of his initial page by page first review (or look back at it) once it was completed, his speed on his second review may have been faster because of his familiarity with the documents.

* Both Tom and Noah were significantly more experienced than typical contract reviewers.
  Less experienced reviewers would likely be slower and less accurate.

* Since this was only a one-on-one test, it is possible that some portion of observed differences could be due to variations in the reviewers themselves.

* A typical diligence review project could have reviewers working for much longer and later. Human error is likely to increase in such a situation, which should increase the benefit of using DiligenceEngine.

We intend to run follow-up studies addressing these limitations.

Details on DiligenceEngine

DiligenceEngine reads contracts for user-specified provisions (e.g., change of control, assignment, term),
puts its findings into summary charts, and includes workflow tools to help users refine this information.
Users can download summaries (in Word or Excel) or manipulate and store them online.
The software reviews contracts in seconds per page, and finds 90% or more of nearly every
contract provision it covers (as tested on a diverse set of contracts).

How the Provision Extraction System Works
The system processes agreements in all common electronic formats, including raw scans. Once uploaded to the system, agreements are first run through Optical Character Recognition review (if needed) and then passed through our provision models. Findings are put in summary charts.

We use advanced methods to build provision models. We feed large numbers of provision examples into customized training algorithms which consider this mass of data and build probabilistic provision models. These go far beyond keyword searches.

PROVISIONS COVERED
DiligenceEngine covers the provisions that come-up most frequently on M&A due diligence projects.
The system currently finds the following provisions:

> Title, Parties, Date, Term, Assignment, Change of Control, Confidentiality, Amendment, Indemnity, Notice, License Grant, Bankruptcy, Governing Law

New provisions are added regularly. And custom provision models can be prepared on request.

SETUP
The software is available installation free via the cloud, or can be hosted locally.
It is intuitive enough to use with little or no training.

OUR CO-FOUNDERS
Noah Waisberg, our chief executive, was previously a corporate associate at Weil,
Gotshal & Manges LLP, where he focused on M&A and securities law.

Alexander Hudek, our chief technologist, holds a Ph.D in computer science from the
University of Waterloo with a focus in machine learning and logics.

LEARN MORE
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