

# Contract automation

How automation and artificial intelligence are shaping the direction of the Contract Lifecycle Management software market

In partnership with



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# Our goal and the Software Comparison Tool

In May 2018, World Commerce & Contracting (WorldCC, formerly IACCM) with Capgemini published the first version of the Software Comparison Tool along with an accompanying report on the state of contract automation.

This second edition unpacks the changes that are happening and trends developing in the subsequent years. The number of contract automation solutions (tools) has grown significantly with an ever-increasing number offering greater and ever-more sophisticated capabilities.

## What is Contract Lifecycle Management?

CLM is the proactive, methodical management of an organization's contracting process throughout the lifecycle. CLM software solutions provide the means to digitize that process.

## Our comparison tool

This report's primary goal is to highlight and provide clarity around the multiple features and functionalities offered by CLM software providers and help you navigate through sophisticated paths of CLM automation. Alongside our online CLM [Software Comparison Tool](#), our intention is to support users in the identification of relevant solutions to meet your specific requirements.

This new version of the online tool provides greater options for users around functionality and also highlights CLM providers who are highly specialized in the automation of a single capability (defined as automation specialists).

**Disclaimer** The online application and materials that accompany this report are based on information communicated by CLM software providers and independently verified by WorldCC and Capgemini. They are provided as a source of guidance, and we encourage users to conduct an independent assessment as the basis of any of their actions or decisions. Neither WorldCC nor Capgemini assume any responsibility regarding the accuracy or exhaustiveness of the information or data provided.

# Introduction

For almost 25 years, contracting professionals have struggled with misleading analyst forecasts and limited understanding of the true need for technology to support the contracting lifecycle.

Advisory activity focused almost exclusively on procurement, and struggled to see or represent contracting as anything more than an administrative task supporting commodity acquisition. This failure in understanding, together with a perception that contracts somehow belong to lawyers, drove the development, acquisition and implementation of products that frequently failed to meet business needs.

Today, solutions are changing fast, and capabilities are expanding. The move away from on-premises to cloud solutions is arguably reducing cost and is resulting in far more adaptive solutions. While concerns around data security have not gone away, it's a rapidly declining issue. Today, digitization and integrated technologies represent a new baseline for developing a more holistic commercial capability.

The dramatic events surrounding the pandemic have created an awakening in executive management, a recognition that contracts – and especially the data that they generate – permeate the business and go to the heart of its efficiency and value. At the same time, we have seen the emergence of far more advanced technologies – technologies truly capable of addressing the more complex aspects of contracting and contract value management.

The contract technology market remains complex and, in many ways, fragmented, yet the momentum for adoption is unstoppable.

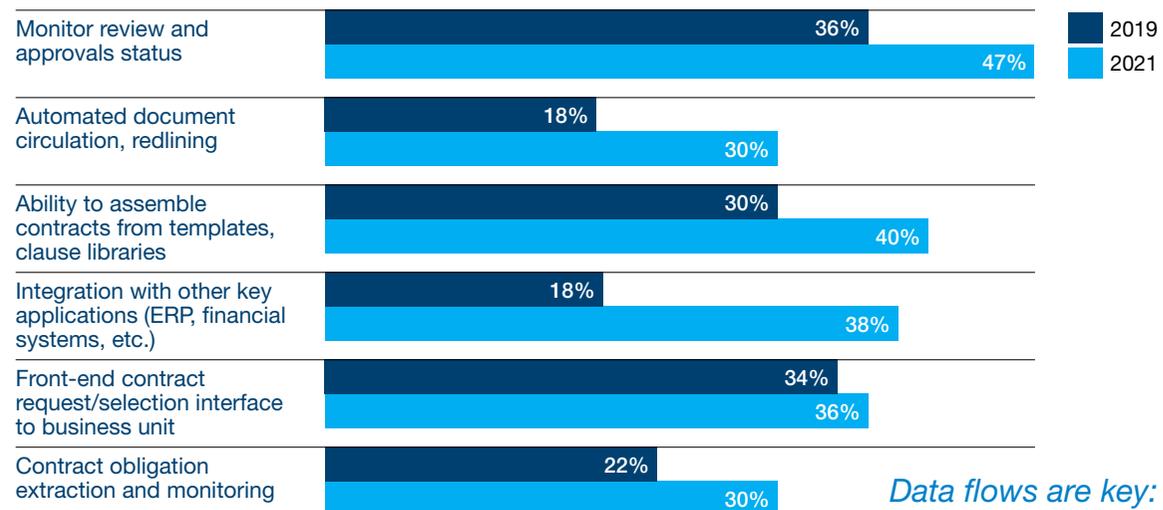
Building the business case for technology is often challenging, largely because there is still a tendency to use and evaluate on the wrong criteria and many lack the data needed to create a compelling value proposition. As our [Benchmark Report 2021](#) confirmed, it is fragmentation of both data and ownership that stands in the way of substantive change and causes problems when generating a business case for investment.

The lack of underlying data means that the argument for technology is often based on efficiency rather than effectiveness and in many cases, implementation focuses on streamlining work within particular functions rather than its true purpose which is to streamline business operations.

Digitization is an opportunity to develop a holistic view. It creates a need for better defined standards and for the multiple stakeholders involved in the commercial and contracting process to become both more transparent and more accountable. Transactional responsibility will always be scattered across the business. But those transactional owners need an integrated process equipped with the tools, systems and knowledge that support speedy, informed actions.

High-performing organizations are leading the way on the use of advanced functionality.

## Cross-sector changes in functionality deployment from 2019 to 2021 (data from [Benchmark Report 2021](#))



*Data flows are key:  
integrating across systems  
shows the biggest growth.*

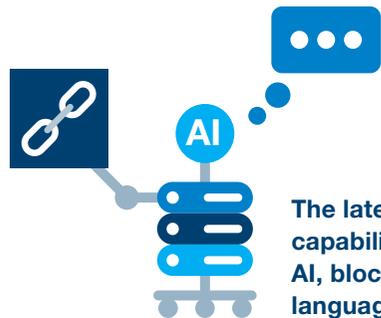
# Where next

New technologies may prove game-changing with digital platforms that can aggregate and drive data flows between and across systems. Artificial intelligence and machine learning are starting to augment human resources in ways that support simplification and promote self-service.

New thinking about standards and contract design offers the prospect of increased market and business intelligence, for contracts to become tools that deliver operational efficiency.

In 2018, WorldCC introduced the term Relationship Resource Planning in recognition of the need to move our focus away from software that fuelled the integrated enterprise and shift instead to solutions that support virtual enterprise and the management of external relationships.

The latest developments in CLM software incorporate artificial intelligence, blockchain and natural language processing to support more advanced features such as obligation extraction and monitoring, shared data streams and ‘smart’ or self-executing contracts.



The latest CLM software capabilities incorporate AI, blockchain and natural language processing.

The pandemic further revealed the challenges of rapidly accessing information, identifying risks and producing critical management reports.

With pressures today around the need for accurate reporting of Environmental, Social and Governance metrics, there's a fresh level of urgency to adopt this technology which requires a shared vision across multiple stakeholder groups and a better definition of an integrated process.

What our analysis has shown is that levels of satisfaction across software users has improved over the last two years and two major factors appear to be driving that change:

1. CLM software providers extending their offering in terms of software capabilities, third-party integration and automation.
2. Organizations are becoming more mature in setting their expectations of contract management solutions.

However, the score is still not high (5.1 out of 10), which is likely caused by ever-increasing expectations.

Given the diversity of the market, without extensive knowledge of the CLM software space, defining requirements and choosing a fit-for-purpose solution can be difficult and time-consuming. This report and the Software Comparison Tool is designed to help users navigate this complexity.

Teams need to carefully prepare their business case – focusing on cost reduction only is no longer going to justify the investment in software deployment and maintenance. Decision-makers are starting to consider how emerging technologies can uncover opportunities for growth and the removal of unnecessary bottlenecks.

WorldCC's report *Into the Future: Contract and Commercial Management: Role and Direction* published in May 2019, highlights the changing nature of the roles performed by Commercial and Contract Managers. It reveals that many tasks have the capacity to be automated which will elevate these roles from largely operational to increasingly strategic.

Much like those Commercial and Contract Managers, CLM software can support an organization at every stage of the process too.

## Where next (continued)

WorldCC's *Into the Future Report* revisits the structure of the contracting lifecycle through the CLM Process Model (below right).

This was further refined via a collaboration of WorldCC Enterprise and Service Provider members to describe the stages necessary for the management of an organization's contracting process throughout the lifecycle:

### Strategy

External and internal uncertainty factors are considered, and CLM governance, processes and organizational design optimized, so that the CLM strategy fully supports the business goals and drives effective value protection / creation. The strategy stage takes input from all other stages within the Model to drive continuous improvement.

### Design

Optimize contracting principles, tools and standards by the application of fit-for-purpose contract clauses, decision-based clause libraries and other content based on internal policies and external compliance, legal, regulatory or market requirements.

### Evaluation

Assess business opportunities and make go / no-go decisions e.g. for proposal, bid or contracting.

### Assembly

Generate the proposal, bid or draft contract package, leveraging the results of the design and evaluations stages.

### Approval

The organization applies appropriate governance to ensure that the internal stakeholders are in alignment and that the final contract draft supports the business opportunity.

### Negotiation

The team develops a negotiation plan and works collaboratively to reach a consensus with the other party (or parties). A risk and value assessment is conducted in preparation for implementation.

### Implementation

Authorized signatures are obtained, and the contract is mobilized for performance.

### Performance

Post-award, we manage and report on the contract and the contractual relationship, tracking obligations, responding to jeopardy, controlling and mitigating risk and handling disputes. Change management is a key part of this stage.

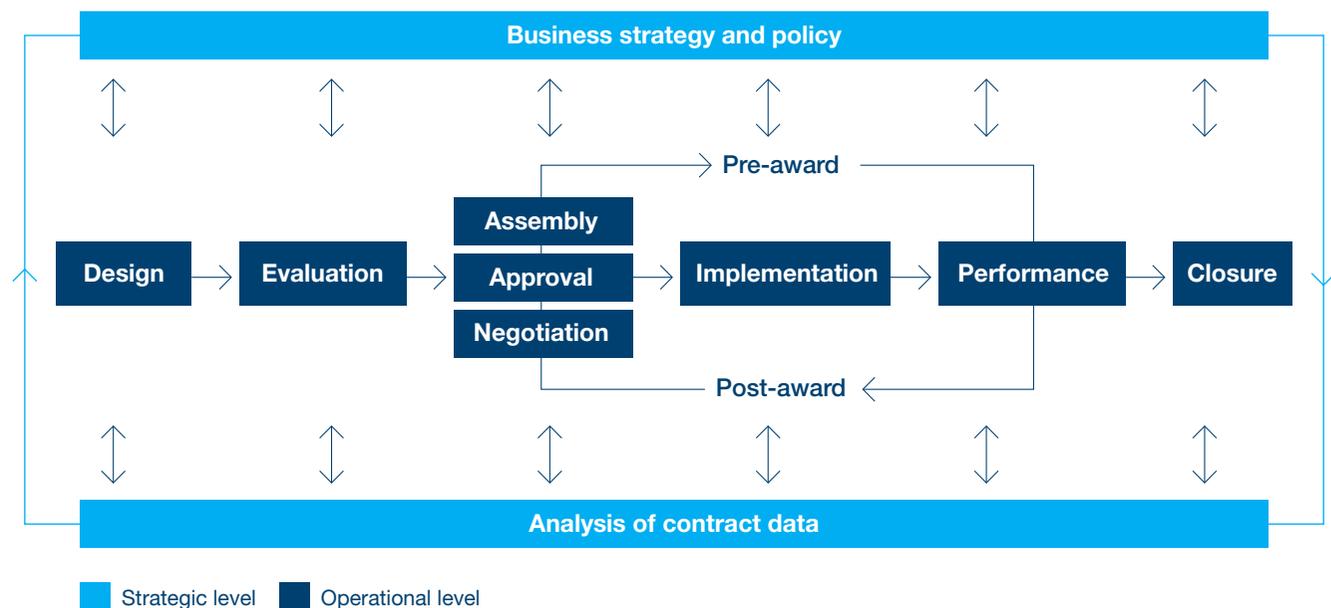
### Closure

Manage a contract's cancellation, expiration or termination and progress post-closure activities such as sub-contract close-out.

### Analysis

Analyze business data to develop actionable insights and business intelligence to improve compliance and relationships, to reduce risk and to create / protect value. Like the strategy stage, this stage takes input from the other stages in the Model to learn from previous experiences.

## The CLM Process Model



# Trends

Our most recent analysis has highlighted a number of key trends in the market:

## 1. Cloud services

The ability to provide services through the cloud is being offered by every single CLM supplier.

## 2. Consolidation

Over the last three years, we have witnessed larger companies acquiring several CLM and AI extraction solutions in an attempt to create or extend their CLM offering.

## 3. Capability offer

The majority of CLM software providers are offering capabilities defined in this study as ‘common’ with Document Repository being offered by almost everyone (94%) and Management Reporting by eight out of nine providers. Contract Assembly is being provided by almost 80% of the companies while Contract Approvals by three out of four providers.

## 4. Collaboration and relationships

On average, capabilities from the pre-award phase are most common, and this is even more visible among companies founded after 2014, especially for Contract Negotiations and Contract Assembly with 25 and 20% growth, respectively.

We believe that CLM suppliers will take it a step further in the near future by integrating their solutions with widely available instant messaging and video collaboration solutions.

## 5. CLM and RFX

Only a handful of solutions come with the ability to facilitate tenders and RFX processes. With tighter integration and standardization of the company’s clause and template libraries, data from sales opportunities could be automatically translated into an RFX document and further into a draft statement of work for a winning proposal.

## 6. Operational capabilities

Capabilities within the Operational phase are, on average, slightly less popular. New companies are not focusing on strategic capabilities like Contract Portfolio Analysis, Risk Management, or Entity Management which are three times less likely to be part of their offering. At the same time there has been a small increase of interest (6%) in Contract Data Extraction within the offerings of new startups.

## 7. Data extraction

With half of the validated solutions able to extract some of the contractual metadata automatically, it is important to emphasize that current solutions are still developing. Depending on the use case, they can reach 60–90% accuracy, but most of them require careful training on the company-specific examples and content.

## 8. Post-award capabilities

These were rarely a priority for CLM software providers and are becoming even less important for newly created companies. They offer Performance Management six times less frequently and are four times less likely to offer Obligation Management.

## Insights from the analysis

Without the right focus on contract handover and effective knowledge management between pre- and post-award, much of the effort placed on designing, assembling, negotiating and approving contracts can go to waste. As a consequence, they won’t be able to capitalize on all the hard work Legal and CCM teams put into designing, assembling, negotiating, and approving them in the first place.

Without the right obligation and performance management modules, the CCM community may struggle to monitor carefully negotiated responsibilities and efficiently decrease value erosion.

While CLM software providers are gaining experience in third-party integration, there is still plenty of room for improvement. More than half of the providers surveyed were not experienced in the integration of any Configure Price Quote (CPQ), Financial Supply Chain Management (FSCM) or even Enterprise Resource Planning (ERP) software. There can be substantial benefits from such integration:

- Effective resource management on contractual obligations through the integration with ERP.
- Automated adoption of pricing and milestone schedules as defined within the CPQ application.
- Automated generation of invoices considering any penalties and gain-sharing through the integration with FSCM.

# CLM Software Comparison Tool

This report describes our understanding of CLM software capabilities and features and is accompanied by a free online CLM Software Comparison Tool, which lets CLM providers promote key parts of their offering and gives our visitors a chance to define their requirements in a more detailed and specific way.

To use the tool to its full extent, we encourage you to use the report and familiarize yourself with how certain CLM software features are organized into capabilities and what functionalities the CCM community may be looking for within the current solutions and in the near future.

CLM software providers are welcome to participate at any point. We will continue to grow the number of validated solutions and stay up-to-date to ensure our visitors will be provided with relevant results for their searches.

<https://software.worldcc.com>

## New features of the WorldCC / Capgemini online tool (as part of the 2nd edition of the study)

1. Dynamic loading of most relevant CLM vendor profiles



2. Identification of most recent profile updates and CLM vendor membership in WorldCC



3. Identification of key strength or differentiator of a CLM vendor



4. Improved graphical representation of CLM vendor profiles



5. Redesigned calculation of CLM vendor relevance



6. Ability to compare selected CLM vendors with respect to the requirements chosen by the user



7. Ability to request contact directly from the CLM vendors of choice



8. Ability to request detailed CLM software consulting services provided by Capgemini



# Methodology and scope

Our experience, combined with user feedback over the last two years, prompted us to spend significantly more time with CLM software providers. We tried to get better clarity on their automation capabilities to produce a more detailed search feature for potential clients visiting our website.

In January 2020, WorldCC and Capgemini decided to conduct a survey to understand automation advancements across CLM tools available on the market.

The feedback below from Inland Revenue on the CLM Software Comparison Tool was typical of users:

*“We found the tool easy to use and it gave us excellent insight into what was available from the market, this helped us during our market analysis phase to target organizations who were a close fit to our requirements.”*

**Simon Mason, Head of Commercial and Procurement, New Zealand Inland Revenue**

The steps taken to conduct a study were similar to the first edition. Over 240 CLM software providers were invited to participate in the research. Thirty-nine questions contained in the ‘automation advancement survey’ were used to create CLM vendor profiles, provide details about their tools’ capabilities according to the updated report, and experience in integration with third-party software.

More than half of the vendors have currently completed the self-survey. All CLM providers who expressed interest were given a chance to present their software in action and highlight key strengths and automation areas from March to June 2020.

We used the information provided by CLM vendors to populate a guided vendor selection tool found on the WorldCC website: <https://software.worldcc.com>

So far, more than 100 CLM software have been validated by our team.

Four capabilities appeared significantly more often across the CLM providers’ offering. They were:

1. Risk management indicators based on portfolio analysis.
2. Contract leakage and cause analysis.
3. Risk mapping and scoring.
4. Advanced approaches to knowledge capture and sharing.

They are the most searched capabilities on the WorldCC website and are in line with the most recent WorldCC [Benchmark Report 2021](#). This indicates that technology adoption varies between market sectors but is still mostly limited to the use of the above capabilities.



**Over 240 software providers were invited to take part**



**There were 39 questions in the automation advancement survey**



**The information provided led to the Capgemini team validating 100 CLM softwares**

## Methodology and scope (continued)

In our latest version of the Software Comparison Tool, CLM vendors are asked to highlight capabilities in three key areas:

- **common capabilities** – features that most-frequently appear as part of a solution (e.g. document repository, assembly, approval management and reporting)
- **differentiators** – up to four capabilities that set the solution apart from the competition (e.g. complex portfolio analytics or effective obligations management).
- **additional capabilities** that showcase the solution, such as SLA management or risk management.

With this change in approach, we will continue to highlight key strengths in end-to-end solutions, and also now be able to report on applications that specialize in just a few, less-common capabilities.

We are grateful for the time CLM vendors dedicated to gathering necessary information and showcasing their software during demonstrations to serve the CCM community. We also encourage other providers to participate in the Contract Automation Study and join the list of validated companies represented within the CLM Software Comparison Tool.

### Extent of deployment of CCM software tools across sectors globally (data from *Benchmark Report 2021*)

	Deployed	In process of deploying	Would like to deploy	Little or no interest	Don't know what this is	
Front-end contract request / selection interface to business unit	23.9%	13.5%	24.8%	27.4%	10.4%	1-19%
Ability to assemble standard contracts from templates	24.6%	15.8%	30.1%	27.2%	2.3%	20-39%
Ability to assemble contracts from a clause library	10.9%	14.0%	41.0%	32.4%	1.7%	40%+
Digitized contract playbooks	8.0%	12.0%	37.0%	31.5%	11.5%	
Defined and automated workflow for non-standard terms or agreements	10.7%	13.5%	38.6%	31.7%	5.5%	
Collaboration portal for joint editing	18.6%	13.5%	34.7%	29.2%	4.0%	
Monitor reviews / approvals status	27.7%	20.3%	32.3%	17.4%	2.3%	
Automated document circulation, redlining	13.6%	15.4%	39.4%	27.2%	4.3%	
Risk scoring	17.9%	13.0%	40.5%	23.7%	4.9%	
Repository of signed contracts	59.9%	16.8%	15.1%	6.3%	2.0%	
Contract obligation extraction	15.9%	16.2%	40.8%	22.5%	4.6%	
Post-signature monitoring of compliance with contract terms	20.0%	16.9%	39.1%	20.6%	3.4%	
Integration with other key applications (ERP, financial systems, etc.)	18.3%	20.6%	37.4%	20.3%	3.4%	
Management reporting / dashboard	24.9%	23.5%	36.3%	13.3%	2.0%	
Contract analytics and individual agreements	13.7%	16.9%	46.3%	19.1%	4.0%	
Contract analytics and portfolio of agreements	13.7%	16.0%	45.0%	21.1%	4.3%	
Artificial intelligence / machine learning	4.1%	11.9%	40.3%	35.9%	7.8%	

The momentum for CLM adoption is unstoppable. Given the level of executive interest, it is not surprising that the WorldCC study reflects that nearly 60% of executives say that automation or the deploying of commercial and contract management technology is a priority.

# Analysis – capabilities

We discussed at length how to capitalize on the first edition of the report and determine the changes we should introduce.

We considered feedback from CLM software providers plus the WorldCC revised view of the contracting lifecycle. We wanted to make it easy to understand and follow, so we regrouped, reordered, and refreshed the capabilities.

The first step was to divide capabilities into three major phases, according to the WorldCC's CLM Process Model:

## The 15 capabilities in their three major phases



1. Contract information extraction
2. Document repository
3. Entity management
4. Management reporting
5. Risk management
6. Contract portfolio analysis



7. Contract assembly
8. RFx management
9. Contract negotiations
10. Contract approvals



11. Contract handover
12. Obligation management
13. Performance management
14. Conflict management
15. Change management

The next step was to map existing capabilities from the original tool to the correct phase in the CLM Process Model and to one of the 15 new capabilities. We found that certain CLM product features supported one or more capability.

Looking from a customer perspective, we firmly believe it is capability that matters. From the CLM software provider perspective, one feature of their system (e.g. negotiation portal) may be used in many capabilities that could drive a natural growth CLM software offering. On the other hand, you could satisfy a capability using various manual, semi-automated or automated methods – for example, the way an application could draft documents may be realized by external content creation software (e.g. Microsoft Word) or inside the application, with dynamic forms or using clause and template libraries.

We anticipated the ongoing need to use the online CLM Software Comparison Tool for deeper analysis. Then, for each of the capabilities, we defined several relevant features (essential contract criteria or characteristics) and asked ourselves the following questions:

**Q:** Which of the capabilities could be automated with the current and upcoming technologies?

**Q:** Which tasks do contract managers consider burdensome? In other words, decide which tasks should be performed by the software itself or at least be semi-automated?

Given the above, we purposely include next-generation and emerging technologies regardless of the extent to which they are being used or developed by CLM software providers.

### Our reasoning

We hope the growth of automation technologies used by CLM providers will grow exponentially. The current early adopters will be quickly followed by most of the market.

So, let's unpack the three phases of CLM software and map where the 15 capabilities fall within each phase >

# Operational phase

Within this phase, we define capabilities related to the overall management and operations of the company with respect to Commercial and Contract Management.

Here we focus on a global view across all contractual documents of a company and any patterns and correlations within data associated with these documents.

We believe the order of capabilities follows a logical path where an organization's data must be found, gathered, structured, reported on, and analyzed.

Some of you may wonder why the Document Repository is not first and foremost. It's a good question.

However, someone would have to structure the documents being uploaded to the repository first, so if a CLM application extracts data from the documents, the categorization can be done automatically based on data already gathered.

## The six capabilities for the Operational phase



# 1. Contract information extraction

This capability focuses only on data extraction without any data analysis. This analysis would happen in various other capabilities depending on the extracted data. For example, extracted clauses should be compared to form a clause library but thoroughly analyzed for the sake of identifying corresponding obligations.

We believe this step is one of the most important. Because, depending on the quality of data extraction, further automation of functionalities (like structuring the repository, analyzing data, creating new contracts, managing obligations or performance) will either multiply the use of company's best practices or generate more errors and mistakes.

Computers cannot see things as humans do, so software needs to prepare uploaded documents by recognizing their contents through Optical Character Recognition (OCR), which can understand computer text as well as handle pictures, tables, handwriting, etc. Then, depending on the machine learning (ML) model types and maturity, a tool can either start extracting at a section level or go as deep as a clause level understanding of context and correlation between adjacent words.

It is fair to assume that a contract manager can thoroughly review around six pages of a document within one hour. In contrast, a CLM software equipped with the right ML algorithms for document analysis can extract data, with higher accuracy, from roughly 1,000–1,500 pages, within the same time frame.

The time-saving potential behind automated extraction, combined with its ability to mitigate most human errors, makes it a must for any large-scale CLM software deployment, mainly focusing on the post-award phase. On top of its speed and accuracy, automated extraction can take away repetitive work and let teams focus on more sophisticated and creative tasks. That way, you are not only investing in the correctness of data but also allowing your teams to work on more engaging tasks.

During the study, CLM software providers were asked to address these criteria:

## Document upload



- Automated document loading
- Supported file extensions
- Type of data the OCR engine can handle and extract (tables, text on pictures, handwriting, technical drawings, etc.)

## Metadata extraction



- Automated extraction of basic (such as legal entities, language, effective date, etc.) and advanced contract metadata
- Ability to manually correct or select the right value for a given metadata point

## Clause extraction



- Automated extraction of clauses
- Storing the link with its 'metadata' (e.g. clause type, with what contract type / size / value / sector / customer was it used) and identifying parameters within it

## Template extraction



- Automated extraction of documents, order of clauses and sections with any graphical data captured (customer's logo, font type, size, headers and footers, etc.)

## 2. Document repository

This is considered one of the most common capabilities, especially across CLM software providers specializing in full contract lifecycle.

Storing digital versions of documents with an ability to filter, sort, and search through them in multiple ways is usually the very first requirement of customers interested in making a giant step by moving away from paperwork cabinets and adopting a CLM software solution. We believe that for any business planning to manage their contracts, easy access to contractual data and confidence in its quality is one of the foundations that cannot be omitted.

Beyond this, you need common metadata points to structure the repository, enabling quick reporting and statistics in the next steps, performing uncommon tagging to increase repository flexibility and aid work planning.

Even in a functionality considered so basic – after extracting data as defined in the previous capability and analyzing it, you can start to more readily classify different forms of contract. This includes understanding the relationship and contractual dependency between or among documents and their impact on the automated creation of document trees and order of precedence.

CLM vendors are also starting to invest in capabilities facilitating contract understanding such as contract wording simplification, content visualization. This topic is also addressed by WorldCC with its [Contract Design Pattern Library](#), and document preview functionality with references to extracted information and results of search queries.

We believe CLM tools may eventually understand user preferences from the filtering, sorting, or method of searching through the repository, and CLM tools will also understand the context in free text or free speech search queries.

For example, a question like this: “I need to find all high-risk high-value contracts we have signed over the last three years in Germany...” should filter only the specific conditions requested in that question and present results in a dashboard view.

During our study, CLM software providers were asked to address these criteria:

### Dashboard view



- Automated document classification into contract records
- Addition of new metadata and tags
- Contracts' representation (folder or database structure)
- Filtering and sorting with real-time updates

### Contract view



- Automated creation of document trees and order of precedence
- Version control
- Automated language simplification and graphical description
- Document preview with metadata and risk profile referenced

### Search



- Supported search types like metadata, tag, free text, fuzzy
- Auto-fill and auto-correct
- Search results preview in documents
- Automated search criteria based on 'free text' input
- Learning user's common search preferences

## 3. Entity management

The Entity Management capability introduces a third-party portal feature that most transactional phases' capabilities also use. That's because successfully delivering goods and services requires uninterrupted contact with counterparties during the whole lifecycle. This capability also focuses on how it can simplify managing clients and their separate entities.

By linking a CLM application with a Customer Relationship Management (CRM) software solution, you can validate existing client data and organize it from a legal perspective. To do this, you would compare the:

- Extracted client's legal entity name with the company's CRM data
- Registration numbers available in the documents with official company databases.

Management of internal organizational structure is another task supported by this capability, where setting up a profile per legal entity could be quite similar. Still, the data to be stored and managed will be more comprehensive. A software solution should enable you to track information regarding ownership records, directors, and officers at any point – from its formation, through any mergers and acquisitions until eventual entity dissolution.

For today's companies, competing in the international marketplace has never been easier. However, a global presence can increase the number of international and local filings a company would have to submit. In such a case, more and more regulations and requirements can add complexity. Therefore, keeping all the subsidiaries compliant with their responsibilities can be difficult.

To sum up, the external part of this capability would bring a variety of benefits across industries with a specific advantage in procurement, for the sake of tracking responsibilities and documentation of a company's providers and subcontractors. Used internally, this capability would be best suited to larger, international companies with a centralized legal department facing numerous regulatory changes across the world

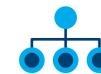
During the study, CLM software providers were asked to address these criteria:

### Internal entity management



- Internal Legal Entity creation
- Storage of corporate filings
- Tracking ownership, stock and shareholder information
- Creation of new filings
- Managing an entity's regulatory responsibilities

### External entity management



- Automated creation of Client Legal Entities (CLEs) from CRM
- Management of CLE-related documents (e.g. insurances, certifications and standards, and templates)
- Creation of organization charts for multiple CLEs from a unique account
- Access to the history of engagements with a client or account

## 4. Management reporting

Management Reporting leverages the structured data set often created within the Document Repository capability and are usually offered together.

We deliberately separate this functionality from any analysis that is less common across CLM software providers' offering and often require significantly more data and time to fine-tune.

An option to export data from the system in any order and file format – such as a .csv file, Excel spreadsheet, or Word template – should be given not only for the pre-defined reports set by administrators but also for any report defined by the user. From here, look for improvements like embedding a link between an export file and a tool's database so that a report generated once could be quickly refreshed instead of being generated and downloaded again. Some of the tools available on the market also allow the users to schedule their reports' generation based on an event or its recurrence.

Automation features already mentioned in the Document repository section (page 13) could be reused for the benefit of management reporting. As the system will have started to understand context this could potentially streamline the selection of data to be reported on. The user could just write what is needed instead of configuring it.

Tracking user's habits could help in the automated creation of reports. For example, a tool could learn that a user generates a specific report every first week of a month so that the beginning of the following month, a new version will be waiting for the user's review.

As a result of our research, we are adding an action center to this capability for two reasons:

- Most of the time, actions are accompanied by the statistics that would usually be reported on.
- They are not exclusively linked with the pre- or post-award phase, so could naturally fall into the Operational phase.

You could use such a center to plan a workday or week, prioritize more essential actions, and track any backlogs. And with the ability to access details of each task and perform each one right away, you can become even more productive. A center can also serve as a source of information and training by letting administrators define important notices, guides, and quick shortcuts to be displayed to every user of an application.

During the study, CLM software providers were asked to address these criteria:

### Pre-defined reporting



- Data format and drill-down functionality
- Available ways of exporting data (raw data table, pre-defined template, graphical representation)
- Linking exported data with a database for an automated refresh

### User-defined reporting



- Report generation by a business user
- Scheduling report generation (and recurrence) based on a condition
- Recipients' specification
- Automated report generation based on user's free text query

### Action and notice center



- Interactive drill-down action report enabling access to the right place to complete an action regardless of its nature; this could be a document review, an obligation response, etc.
- Ability to request action from another business user
- Ability to define and display important notices

## 5. Risk management

Software functionalities within this capability improve five steps of a risk management process:

1. Identification
2. Assessment
3. Prioritization (and response planning)
4. Treatment
5. Monitoring.

Each step could be partly automated, but it is critical that you have a solid company-wide risk framework in place. In the end, the software will need to know how to react to certain risks it will identify – just as humans would.

In this report, we are dividing risks into three types:

- **Contractual risks** include any legal, financial, and regulatory risks linked with an agreement between companies.
- **Non-contractual risks** include any operational, technological, and reputational risks affecting the company's strategy.
- **External risks** include any environmental, political, and macroeconomic risks that are beyond the company's control.

Identifying the risk is an important step of the process because you can only manage risks that you are aware of. A software application can benefit you in two ways. By analyzing the wording of an agreement, it can:

- spot and document contractual risks available in the contract.
- provide a collaboration space for all stakeholders to let them expose various risks that would remain hidden if a team discovering them were not diverse enough.

When you assess risk, you can usually consider its potential impact and the likelihood of it occurring. These factors could then be measured in terms of probability and frequency. For both contractual and non-contractual risks, a CLM software tool could reuse company's internal data, policies, and procedures to evaluate the impact of the risk – based on historical data about the severity of a risk occurrence.

The likelihood of risk could be automatically determined depending on how often a certain risk was realized in the past (versus how many times it was possible to occur). External risk assessment is significantly more complex. Instead of reviewing internal, easily accessed company data (such as a company's former engagements history), you would have to analyze historical data from millions of independent sources.

Having these factors defined and documented in a risk register according to identified risks and their descriptions would help categorize risks based on their consequence and structure. Most of the risk management solutions on the market are offering such a register to track the initial and reduced risk ratings, mitigation actions, triggers, and owners. In quantitative assessment methods, the risk rating is usually a product of impact and likelihood scores. Such scores can be altered by mitigating chances of risk occurrence and softening risk's impact once it becomes a reality. If you feed a risk management software tool with prevention and contingency plans, corresponding actions can be automatically propagated within the risk register for particular events.

During the study, CLM software providers were asked to address these criteria:

### Risk identification and assessment



- Automated analysis of extracted clauses
- Linking them with risk record(s) and metadata (connecting identified risks with contracts)
- Batch addition of generic 'business' risk(s) based on policies and procedures

### Risk register and rating



- Automated risk classification
- Ability to sort, filter, and search through risks
- Automatic rating calculation and real-time updates
- An automated suggestion of risk owners and preventive measures based on historical resolution data and company's mitigation and contingency plans

### Risk prioritization and treatment



- An automated suggestion of priority based on risk metadata and company strategy
- Mitigation cost estimation
- Automated notifications of mitigation activities to be performed

### Risk monitoring and review



- Automated notifications and update of risk factors and ratings based on internal / external events and tracked data
- Priority reassessment
- Contingency workflow
- Root cause analysis (RCA)
- Preemptive analysis with actionable insights or automated actions



## 5. Risk management (continued)

With all scenarios rated and structured, you can create a comprehensive view of a company's risk exposure and decide how to prioritize your responses according to a risk strategy framework.

There are many ways to manage risk. Relying on existing business controls or putting in place additional mitigation are common approaches. CLM tools can add material value in the tracking and management of contract risks.

Another strategy to deal with risk effortlessly is to transfer it to a third party, which would accept certain liabilities in exchange for an agreed incentive. Common examples include purchasing insurance to protect yourself from financial risks and outsourcing a project to limit any risks related to a work being subcontracted.

You should mitigate any risk that you cannot accept, avoid or transfer to minimize its likelihood and impact – or maximize its likelihood in case of a positive uncertainty, usually defined as risk exploitation. A CLM software can notify the right people of any mitigation activities they are supposed to perform at the right time and ensure they are completed.

Not all risks can be minimized or eliminated. Therefore, it is important to constantly monitor and review changes leading to any risk development outside of acceptable thresholds. Changes related to internal risks can be tracked by integrating a CLM solution with other software used by the company, e.g. project and resource management tools.

For example, lack of electricity (i.e. a power outage) that stalls product delivery could automatically increase the likelihood of missing the deadline, which, in turn, could affect the risk's rating. But if the rating adjustment exceeds the agreed limits, the risk management solution should instantly notify appropriate stakeholders and company management to implement additional preventive measures at their earliest convenience.

And if the inevitable happens, a risk management solution should initiate one of your contingency workflows based on various company procedures, such as a business continuity plan or a disaster recovery plan. That way, depending on the event and its impact, the solution could take the right steps automatically and immediately inform necessary stakeholders about a situation – and the additional measures they can implement.

Capturing information about natural, economic, and geopolitical events affecting a company's risk exposure would require access to unthinkable amounts of external data sources and sensors. We are already surrounded by solutions capable not only of real-time data tracking, but also of highly accurate predictions of future events based on that data. Examples are not only local weather forecasts (although your operations may be impacted by things like temperature, heavy rain or dense fog) but also spotting the origin of a disease and forecasting its global spread. This is accomplished by finding anomalies in data extracted from government and other authorities' announcements.

We foresee the growth of predictive and preemptive solutions dedicated to risk management. Predictive ones should help you understand the initial trigger(s) leading to an adverse outcome with serious consequences. This would be done by mapping cause-and-effect relationships, e.g. using a fishbone diagram or a cause map. Preemptive ones should help contract managers analyze the chain of reactions and perform actions that would stop the negative outcome, almost like the Precrime Department from *Minority Report*. Perhaps the day will come when we will manage contracts on big interactive screens with hand gestures and voice commands.

Both Risk Management and Contract Portfolio Analysis capabilities will thrive while fed with more and more high-quality data, which is why they are categorized under the Operational Phase and could promise faster ROI for companies with larger contract databases and TCVs.

## 6. Contract portfolio analysis

We have separated analysis from Management Reporting capability as we believe the latter is only aimed at organizing raw data into a structured set of information, while the purpose of data analysis is to provide useful insights and suggest optimal actions.

Contract Portfolio Analysis would leverage a variety of techniques to clean, transform and visualize the organized set of contract metadata and contents of contractual documents. Its goal is to provide insights and recommendations in a format that is easy to understand for those making decisions about the company's strategy and future. In some cases, it could even take action on behalf of the users.

A software capable of analyzing the portfolio of contracts would help compare and evaluate various metadata of any subset of your company's contracts. With the right set of data visualization and transformation methods, you could analyze:

- Profitability of the business (based on the total contract value and corresponding costs)
- Financial, regulatory, and environmental risk exposure (based on the existence of certain provisions within contracts)
- Company performance and corresponding customer satisfaction, and many more.

All of the above criteria could be analyzed for, or compared between, specific:

- **Locations:** Globally or within a certain continent, region or country
- **Types of business:** Line of business, department, market sector
- **Scope and portfolio:** Type of products, services, solutions
- **Counterparties:** Individual customer or account, group of entities, suppliers, subcontractors, etc.

Some CLM software providers are taking it a step further with the analysis of contractual wording. For the contracts created through the Contract Assembly features, it could be as simple as tracking the use of certain pre-approved clauses, sections, or templates within the software. However, suppose the tool allows you to also negotiate the contract on a clause level. In that case, tracking may include a whole set of information about the negotiation process, such as how often a certain clause or section is being negotiated, how long it takes to reach an agreement with the counterparty, what are the differences between initial and final versions of the clause, and how does it impact customer satisfaction, etc.

During the study, CLM software providers were asked to address these criteria:

### Portfolio analysis



- Drill-down analysis, metadata analysis, portfolio analysis based on spend, location, scope, satisfaction scores, etc., compliance analysis

### Contractual wording analysis



- Clause usage, frequently negotiated terms

### KPIs, OKRs, and balanced scorecard



- Setting, tracking and analysis of KPIs and OKRs, ability to design and track Balanced Scorecard (including vision statement, strategic linkage model, objectives and measures), automated KPI prioritization and suggestion of different KPIs more aligned to objectives, strategy and vision statement, automated identification of complementary / contrasting KPIs

## 6. Contract portfolio analysis (*continued*)

For the agreements created outside the software or even before the digital age, CLM software providers combine OCR and ML features to let their tools capture the contents of the executed agreements and understand clause versions, types, and meaning. We have defined them in more detail under the Contract Information Extraction capability. In such a case, there would be no history of clause changes available, and the tool will have to compare extracted information against a company policy book.

Structured data and analysis are usually a baseline for a company's strategy and actions. Regardless of the company, its goals and strategy are defined through similar metrics – Key Performance Indicators (KPIs), Objectives and Key Results (OKRs) or a Balanced Scorecard. Those are used to generate additional value and improve competitive advantage. Advanced analytics with AI and ML models

can help define what metrics are important to track, how to measure them, and what is the best way to optimize them.

Setting priorities across the portfolio of metrics is not as easy as finding the ones with the most significant impact on a company's performance and maximizing them. It is equally important for its strategy to minimize the negative impact of changes and undesirable KPIs on key goals. To achieve that, software should understand the relationship between the strategic indicators. In other words, some of them will form a complementary group where an improvement of one factor will positively affect others, yet there will also be some competing with each other. AI makes it possible to achieve a balanced blend of all factors on both a local and global scale, cost-effectively. Some companies are trying to take it to the next level by letting their ML models analyze raw data to find and recommend new metrics that may become critical to an organization's future strategy. Metrics that could have not been discovered by humans.

Tools capable of analyzing vast amounts of data from external sources, already mentioned in the previous capability, can also help to assess a company's qualitative KPIs that cannot be easily measured. Measuring company reputation may serve as a good example. You would not be able to survey the whole world population, but only asking your stakeholders for feedback is already introducing a bias to your results. Also, you will be able to review the responses of those who decide to provide it. Analyzing opinions about your company posted through social media channels can provide you with a more comprehensive view of your company's brand.

# Transactional phase – pre-award

This phase combines all contract management activities needed to move the process from the requirements gathering stage, up to the point a binding contract is mutually agreed to and signed.

We view this process from the individual contract perspective, but we will often make the best use of data analysis originally annotated in the Strategic and Operational Phase. To keep it short and simple, we are interested in anything connected to creation, negotiation, review, and approvals.

We put Contract Assembly before RFX Management because it's not always going to be used and, whether you conduct or participate in the RFX, you need to create documents where drafting would come in handy in the first place.

## The four capabilities for the transactional pre-award phase





## 7. Contract assembly

Contract Assembly is the most common capability of validated CLM software. It is a basis for any new document to be created whether it is a commercial proposal, a master agreement, a statement of work, a change request, or anything similar.

Today, contracts are being drafted by such a variety of users with different perspectives (account executives, delivery and contract managers, legal counsels) that it would be impossible to serve them with a one-size-fits-all solution. To increase drafting efficiency regardless of the user's habits and needs, CLM vendors had to develop multiple creation channels (web-forms, within the application, locally with MS Word plugin, etc.). The ability to design CLM software for the user is making technology adoption easier.

CLM vendors offer a lot of solutions depending on the business type and size. For business-to-consumer (B2C) sales contract templates with standardized clauses ready to sign without any legal supervision are letting sales representatives close deals faster. Companies interested in a bit more freedom are served with semi-automated assemblies using pre-approved clause libraries, while for highly complex non-standard legal agreements, CLM providers are offering the ability to draft a contract from scratch while keeping in mind a company's general terms and conditions, cross-referencing and clause interdependencies.

To date, hardly anyone is investing in automated translation and multilingual contracts, smart contracting templates and algorithms, or clauses visualization. Much work needs to be done on the analysis and consolidation of clauses extracted from numerous company documents entered into the software, to capitalize on the manual work performed before the CLM age.

Another feature that combines extraction and analysis of contractual wording with a clause library is the ability to handle third-party templates. Such templates require analyzing non-standard wording and comparing it with a company's well-established standards.

The Contract Assembly capability reflects the quick development of automation functionalities and is worth watching closely in the future. We believe the advancements in Deep Learning (DL), Natural Language Generation (NLG), and Multi-Experience (MX) platforms will significantly change the way contracts are brought to life.

Thanks to the DL, CLM software will predict customer needs by analyzing the contract's compliance and historical disagreements to find pain points and areas for improvement. With the use of NLG, those predictions could be transferred into suggested changes in contract renewals. MX could play a significant role in CLM providers' efforts to further improve efficiency and accelerate adoption amongst business users.

We foresee that CLM vendors will soon reap the benefits of assembly functions when creating standardized document deliverables. This would positively affect the quality of the deliverable and its review cycles. It would also automate part of obligation and compliance management without the need for Content Management / Document Management (CM / DM) system integration.

## 7. Contract assembly *(continued)*

During the study, CLM software providers were asked to address these criteria:

### Clause library



- Automated comparison and consolidation of clauses based on wording and clause metadata
- Assignment of ratings, suggestions, comments, and graphical representation of the clause
- Multilingual clauses

### Template library



- Automated comparison and consolidation of templates based on their contents, graphical parameters, and metadata
- Multilingual templates (with automatically adjusted graphical representation)
- Template modification with dynamic ratings (changing with any modification)
- Service catalog template (standardized services, pricing mechanisms, and automated pricing section)
- Reporting template (defining graphics for a formal document with extracted data)

### 3rd party templates



- Automated extraction of third-party template clauses and comparison with clause and template libraries based on finding similarities, showing differences, understanding order of provisions
- Automated risk rating on third-party template and its clauses by assessing differences
- Adoption of the above clauses and template to the tool libraries

### Document creation



- Contract creation with a dynamic form
- Contract creation from scratch (in-app or using a Microsoft Word plugin) by adding clauses from a library (with any dependencies) and content auto-suggestions
- Commercial proposal automated transition into contract draft
- Automated cross-reference check (different definitions of the same notion, contradictory clauses)
- Batch creation (multiple documents connected with the same contract at once)
- Change request / order creation based on the existing contract being subject to change

## 8. RFX management

RFX Management capability focuses on both sides of the bid: Conducting an RFX process, from defining requirements through to supplier pre-qualification, evaluation, selection, and participating in the bid.

The software can help users define an exact list of requirements that would be further organized in a standardized RFP / RFQ document (to be reused when a Statement of Work is being created). Knowing supplier specialization and the contents of the RFX document, an appropriate tool can define which selection process should be followed and submit the bid documents to the bidders considered the best fit for the requirements.

A supplier module of a third-party portal lets you maintain a verified list of suppliers. This would streamline the whole RFI stage of the bid starting from supplier selection. Through the portal, suppliers will be able to ask questions related to the bid. CLM software would be expected to find the answers, and suppliers would then submit their responses on time in a unified way, thanks to process reminders and notifications. This unification should make the offer selection way easier, if not automated.

For more complex tenders where the selection cannot be automated, a tool should be able to suggest the right review group(s) and individuals from within the group(s) based on the RFX characteristics (such as size, region, technical scope, etc.).

Combining the features helping to run and automate the RFX process with the external entity management for suppliers would give procurement companies quite an edge in their day-to-day operations.

When it comes to participation, three areas technology can play its role are:

- Opportunity qualification by helping users review historical data related to the client and other bids of a similar type
- Dynamic project pricing with suggestions based on delivered contracts and its financial data
- Response creation by leveraging features defined in the proposal's contact assembly and description suggestions based on RFX line items.

During the study, CLM software providers were asked to address these criteria:

### Vendor management



- Creation of vendor profiles (possibly linked with CLEs) with tags and satisfaction score
- Enabling vendors to manage and upload their documents such as nondisclosure agreements (NDAs) and insurance policies
- Ability to review vendor's certifications and standards and monitor their expiration dates
- Accessing a history of bids with vendor participation (win rate, response times, etc.)

### RFX creation and submission



- Dynamic project scoping
- Automated line items creation based on RFX draft contents
- Automated vendor selection process workflow and corresponding notifications
- Automated bidders' selection
- Automated selection of the internal review group

### Sourcing



- Third-party access for vendors to ask questions and further submit standardized response
- Automated questions consolidation with auto-suggested answers
- Q&A section
- RFX amendment
- Comparison of responses and scoring with respect to RFX line items
- Automated selection of limited group for next round or Vendor final selection

### RFX participation



- Opportunity qualification
- Automatic analysis of RFI / RFP (line items) and suggestion of materials to use in response submission
- Automated RFX response creation
- Dynamic project pricing

# 9. Contract negotiations

## Contract Negotiations' capability proves that collaboration with the counterparty is critical to efficient pre-award contract management.

Even though the ability to log in and perform actions by third parties is being offered by more than 50% of the validated CLM software providers, we assume this number will continue to grow in the coming years.

Usually, before a contract draft is presented to the external audience, its contents are being looked at from various perspectives (technical, financial, legal) to mitigate any risks and prevent underscope and overpromise. But, once the first draft is ready, the main goal of the technology would be to foster constructive discussion and enable parties to reach a consensus with as few steps as possible.

We are convinced that contract simplification and visualization will also play a big part in shortening the negotiation process because there will be less room for ambiguity. Certain parts of the contract would not require any clarification, and thus, the contract will be checked faster.

Adopting a negotiation process that happens fully within the software will surely take time, and so far, we need a way to deal with the changes made to the draft outside of the software. This is currently being accomplished by standard features like redlining, tracking changes, and version control.

So far, few CLM vendors are offering fully automated review and negotiation features. Still, we expect this area to expand given the growing interest in the subject among potential clients. Unless your company is inflexible and trying to avoid any exceptions (as can often be experienced in a B2C market), CLM software features – combined with a well-defined negotiation framework – can let companies:

- Communicate effectively and agree on the way to reach the objectives of both parties
- Mutually allocate any risks and rewards related to the agreement
- Work together to resolve any problems without blaming the counterparty
- Agree on how to measure performance and improvements during the delivery of goods and services.

The above points are in line with relational contracting principles as introduced in the WorldCC's *Unpacking Relationship Contracts Research Report* published in October 2016. We believe companies should consider this capability during CLM software implementation.

During the study, CLM software providers were asked to address these criteria:

### Internal review



- Restricting certain clauses and sections from edits (non-negotiable)
- Ability to assign parts of the contract to an expert for review and further negotiations

### Contract negotiations



- Third-party access for clients and suppliers to collaborate and accept, change or reject wording on a clause or section level
- Redlining, tracking changes, and version control
- Clause library update with new versions of clauses
- Automated analysis highlighting risks and delivery / legal points to consider during negotiations

# 10. Contract approvals

Contract approvals are part of most CLM vendors' offerings. They have the highest search rates and are the last of the most frequently appearing capabilities in this report.

Many CLM tools are still limited to simple sequential approval workflows without any option to add conditions or any parallel approval logic, regardless of whether approvals are first action or unanimous.

This is surprising as companies have various approval processes depending on a lot of factors like location, risk, technology, and many more. Without conditional workflows, the number of approval chains to be configured would grow exponentially with every new rule introduced, which could be acceptable for a small business with limited headcount, but unthinkable for a large international corporation with clearly defined legal, financial, and procurement structures.

In line with the action center operational feature helping to plan the work of an individual user, each of the approval workflows can be monitored to see how long it takes for a contract to get from its first draft through negotiations to its final approval and signature.

It's quite a challenge to keep track of who approves the contract and decides when it can be used. CLM software can help overcome this challenge by ensuring all regulations are followed and letting a company pass compliance. It would also come in handy when exposing bottlenecks in the process and highlighting issues hampering efficiency.

CLM vendors are already removing the latter by introducing access to the software from any device for approval purposes. Reviewing a summary of contract information from almost anywhere in the world can have a critical impact on the approval time.

We also anticipate using assembly, review, and approval-related features during post-award management of the contract. These characteristics can be leveraged by users to assemble, negotiate and accept document deliverables.

Combining this capability with contract assembly features should bring substantial benefits for companies focused on frictionless customer experience (e.g. delivering services directly to consumers). As well as reducing the time taken to create an agreement using contract templates, a well-configured approval workflow could simplify the signature process and decrease the overall time needed to close the deal too.

During the study, CLM software providers were asked to address these criteria:

## Workflow / approval configuration



- Workflow configuration (sequential / parallel / mixed)
- Choosing (a group of) approver(s)
- Conditional paths creation
- Approval split (on a clause / section level)

## Approvals



- Automated suggestion and notification of approvers
- Actions tracker
- In-app and mobile approvals
- E-signature integration
- Ability to modify documents

# Transactional phase – post-award

This Transactional phase covers activities aimed at maximizing customer satisfaction within the scope and price agreed upon, before the signature.

As in the pre-award phase, features will be discussed with a single contract in mind. However, we often reference the analysis of data and the use of features relevant to other capabilities. Briefly, within our scope of coverage are all activities linked with delivering the scope of a contract – from handover to delivery to payment, including all necessary changes that could lead to a satisfactory renewal.

It may be surprising to see Change Management capability at the very end of the list but it's with cause and effect in mind rather than importance. After consideration, we realized a mutually agreed change is highly unlikely to end up in immediate non-compliance, performance issues, or conflict. However, any of them can cause it.

## The five capabilities for the transactional post-award phase



# 11. Contract handover

The importance of a good contract handover becomes evident when you consider two outcomes of the WorldCC research:

**1. More than 90% of users find contracts hard to read or impossible to understand.**

**2. Well-managed contractual performance can lead to an average 9% decrease in contract value erosion.**

If you do not share knowledge about the agreement and counterparty with the delivery team, they may misunderstand contractual obligations, which can lead to financial losses (e.g. caused by penalties related to performance issues).

A proper contract handover can start as early as the opportunity qualification since the information provided to the delivery team should not be limited to the summary of the contractual document. Knowledge about the pre-sales process can be stored within the opportunity process and made available to the tool's users. It can also be automatically consolidated into a Deal Briefing document and shared with the delivery team once the opportunity is awarded or at every major update. Relevant knowledge about the pre-sales process can include:

- Customer information and contact details of the key project members and sponsors
- Initial and final requirements, priorities, pain points, and constraints
- Internal solution components and expected outcomes defined within the winning Commercial Proposal
- Preliminary milestone schedule, SLAs, deadlines, and estimated costs.

Similarly to the pre-sales part, a CLM software could organize a variety of contractual information from the agreement in a Contract Handbook form, including:

- Detailed scope and obligations of all parties – including Subcontractor responsibilities if a deal is partially outsourced
- Project schedule with final milestone structure and a list of deliverables to be provided
- Pricing mechanisms, terms and conditions, identified risks
- List of contractual documents and definitions used within them.

A CLM software could leverage its workflow configuration features to ensure the right delivery team is automatically notified whenever an opportunity is awarded and an agreement signed. Integrating the application with a company's email client would allow it to schedule a handover meeting for employees involved in the process. It could also extend it to the counterparty representatives and suggest external kick-off meeting times that should suit both parties' calendars.

Handover of the contract is naturally associated with knowledge sharing. Software can let its users understand the contract, ask questions related to its contents, and route it to a proper subject matter expert for an answer. The application could then automatically organize them into the Frequently Asked Questions (FAQ) section and use the answers to train a chatbot.

Companies that offer contractual wording analysis features as part of the Contract Portfolio Analysis capability, can reuse it to analyze questions and responses from multiple contracts to create a global knowledge base. This allows users to collaborate, share experiences, and document lessons learned during pre- and post-award phases of the contract lifecycle.

With so many ways a CLM software can positively impact contract handover and knowledge sharing quality, you would expect it to be an important part of providers' offering, but it's a main capability of less than 5% of the validated solutions.

During the study, CLM software providers were asked to address these criteria:

## Handover



- Automated notification of contract signature to the customer success / delivery teams
- Automated creation of Definition List / Deal Briefing / Contract Handbook
- Automated suggestion of internal / external meeting time

## Q&A



- Ability to ask questions related to a contract
- Automated suggestion and notification of potential respondent
- Automated questions analysis and FAQ creation
- Chatbot (mobile app / IM / Word plugin / web-based) answering common questions and redirecting complex ones

## Knowledge base



- Consolidation of contract-level questions into space to discuss advice and guidance, exchange experiences and best practices, store lessons learned
- Search through historical questions
- Create global FAQ

# 12. Obligation management

## Management of the obligations of all parties is the backbone of any post-award focused software.

Failure to comply with obligations or delivering them with insufficient performance may be associated with a series of risks leading to conflicts, penalties, and even termination. Persistent non-compliance would have a significant impact on customer satisfaction and would likely cause far-reaching repercussions.

Given the importance of this capability and the fact that manual obligation extraction is time-consuming and error-prone, investments into automation features would quickly deliver benefits.

Assuming the clauses can be extracted as part of the first capability within this report, the software must be capable of the following:

- Understanding which clauses are indeed obligations
- Knowing their essential characteristics like type, due date, recurrence, criticality, etc.
- Linking all of them with a clear description that could be created via contract simplification and visualization capabilities or 'features'.

Having the matrix of unambiguous responsibilities would be useless without the right owners with the time and knowledge to act upon them effectively. This is where resource management enters the picture. By integrating CLM software with the company's Enterprise Resource Planning (ERP) system, it would be possible to automate employees' assignments based on their client knowledge, technical skills and availability.

Taking all of these into consideration should increase the quality of support because the client will be seeing familiar faces that would become increasingly knowledgeable about the client's environment and needs. This will mitigate the risks of poor performance and late completion. ERP integration could potentially improve tracking the time needed to complete some of the obligations.

This, in turn, can either become the basis for cost and price calculation, as in the case of FTE / T&M pricing models, or can be further analyzed to automate effort estimation on similar obligations in future contracts.

The most established functionality offered by CLM vendors today is a very flexible configuration of obligation notifications, including follow-up and escalation paths, recurrence and dependency, integration with email and calendar, ability to submit evidence of completion, and tracking compliance.

Reporting on obligations' health may highlight any negative trends leading to a potential non-compliance before it happens and could initiate a discussion on how to redefine it within a given contract and for future use.

There is also a growing area of smart contracting that deals with fully automated obligations. The status is defined objectively by applying an agreed algorithm on raw data from external endpoints.

During the study, CLM software providers were asked to address these criteria:

### Obligation extraction



- Automated analysis of extracted clauses linking them with obligation's action(s)
- Automated obligation's metadata
- Batch addition of generic 'business' obligation(s)

### Resource management



- Automated resource groups identification
- Automated suggestion of individual owner based on one's utilization or availability
- Automated access management to perform necessary actions
- Tracking action time (cost calculation) and statistics on time spent (further analysis and automated effort estimation)

### Obligation notifications



- Notification configuration (medium, recurrence, triggers, information type, graphical format, etc.)
- Automated notifications based on metadata and escalation path (with triggering events)

### Compliance tracking



- Automated obligation status setting
- Compliance reporting configuration

# 13. Performance management

Failure to meet agreed efficiency levels – especially for business-critical goods and services – is likely to result in penalties and damage to your company's reputation.

Performance correlated with the contractual obligations and effects of a failure to comply with the commitments made are usually quantified in measurable terms by Service Levels Agreements (SLAs).

How can the CLM software help here? Our answer is short – integration.

SLAs define metrics within intervals, which makes it essential to access and track real metric data from any sources like the following:

- Response and resolution times from a ticketing system
- Uptime, mean times to recover and between failures (MTTR, MTBF) from Application Performance Monitoring (APM) systems
- Physical data from IT logs and IoT sensors such as the number of minutes late; the number of oil barrels shipped or received; the amount of gas transferred or used.

Most commonly, you would compare the data gathered with target levels to understand whether a certain level of service was met and, if not, notify appropriate stakeholders and follow any recovery plans.

Currently, only a few CLM vendors offer solutions that correlate the above data with rewards and penalties agreed in the contract and further calculate updated invoice values. With numbers in place, an invoice itself can be generated automatically based on a template filled with extracted metadata. Smart contracting takes it a step further and automates invoice payments by integrating with the company's Financial Supply Chain Management (FSCM) system.

During the study, CLM software providers were asked to address these criteria:

## SLA management



- Automated association of clauses with SLAs
- SLAs metadata setting
- Automated tracking of real response and resolution times
- Automated notifications in case of an SLA-related event

## Invoice management



- Automated invoicing schedule setup
- Validation of events affecting payment
- Target versus real data comparison and associated calculations
- Invoice generation and payment initiation
- Chatbot answering common queries subject to invoicing or payments
- Automated calculation of interest

# 14. Conflict management

It's no secret that how you handle conflicts will significantly impact counterparty satisfaction. That's why investing in features dedicated to streamlining the conflict resolution process is a good idea.

Surprisingly, we do not see much of an interest in this field from website visitors or CLM software providers (less than 5% offer this capability).

The software can make it easier for the client to raise a case in a structured form, e.g. by letting the user choose obligation(s), or a part of a contract subject to disagreement, and answer several questions. And, based on the area of disagreement, it could automatically allocate the right team to resolve it.

A tool cannot ensure the company would have assertive, empathetic people looking after both the business and the client's needs within acceptable contractual limits.

However, we believe the tool should provide practitioners with a conflict 'handbook' summarizing the problem and its influence on the contract, such as its risk or cost.

The tool should also automatically suggest possible resolutions based on historical conflicts. It should even affect the tone of communication being sent to the client. Once both the parties settle, the CLM application could create the first draft of a Change Request (CR) based on the conflict communication and move the process to a change management module, which is another post-award capability, as defined on the following page.

During the study, CLM software providers were asked to address these criteria:

## Raising a dispute



- Highlighting part of a contract and / or obligation record that is subject to a disagreement
- Providing an automated suggestion of conflict resolution team

## Conflict resolution



- Automated conflict 'handbook' with a summary of potential impact
- Access to historical conflicts
- Use of the third-party portal to negotiate or exchange positions with respect to conflict
- Automatic dispute resolution (ADR, ODR, etc.) by blind bidding method and assisted negotiations
- Automated CR draft once consensus is reached

# 15. Change management

Change Management was one of the most challenging capabilities from the perspective of putting it into our report structure.

On the one hand, it can be caused by all of the capabilities from the post-award phase. As examples:

- Non-compliance likelihood could impose obligations' updates
- Low performance could lead to conflict and further require a contractual change.

On the other hand, once the need for change is understood, this would capitalize on most of the pre-award functionalities because you must draft a Change Request and then review, negotiate and approve it.

Once the CR is deployed, it would again affect the post-award activities, such as updating obligation records or SLAs. Also, if that is not enough, if we treat renewal as a specific kind of change, you could say it serves as a bridge between CLM phases (events or certain operations in process within the contract lifecycle).

Change Management enables both parties to react to events and ever-changing needs not predicted by the initial contract. Instead of terminating the old version and signing a new contract – which would take significantly more time and money to perform – parties can agree to implement changes only where they are needed without touching things that are not affected at a certain point in time.

A software solution could let a user:

- Select parts that are subject to change and advise on any dependencies
- Suggest a new version of the clause or contract section subject to change based on the revised needs and existing libraries
- Enable parties to review a conformed version of a contract so far – if it is not the first change.

Concerning a renewal, in addition to the criteria used to manage a change, a tool could add reminders, apply automated resolution methods to negotiated parts, and introduce any additions mandated by new laws and regulations.

Approving a CR or renewal should be straightforward given the functionalities of approvals capability. Apart from one exception – a bulk change applied to a large group of vendors by just changing parameters. This could be a case of new regulations forcing changes in organizations' contracts.

When a change becomes effective, we would expect a CLM application to update the information it was changing in any place of a system automatically – regardless of whether it is metadata, an obligation matrix, or anything similar – and create a conformed version combining the initial contract with any subsequent CRs introduced during the contract's lifecycle.

During the study, CLM software providers were asked to address these criteria:

## Defining change



- Enable communication between parties to define changes needed (referencing affected parts of the contract)
- Automatically select a CR template
- Generate a conformed version of a contract

## Renewal management



- Enable automated notifications of upcoming expiration dates
- Automate the creation of a renewed contract using a version based on the newest templates
- Limit negotiation areas to sections affected by renewal

## Change / renewal approvals



- Automate internal or external review groups
- Trigger the correct approval workflow
- Create batch CR change
- Trigger global approval for batch CR change

## Deploying change / renewals

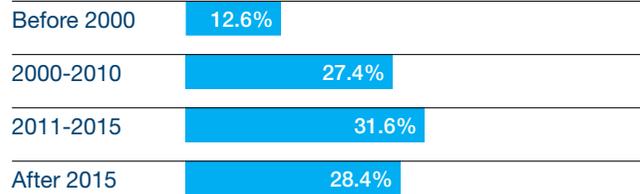


- Automate communication of contract changes to involved parties
- Automate the update of contract-related information (metadata, document tree, obligation matrix, SLAs, etc.)
- Create a graphical timeline of changes introduced to a contract with access to the conformed version at any given point of the lifecycle

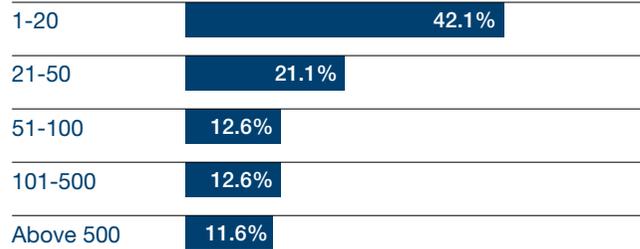


# Results and statistics

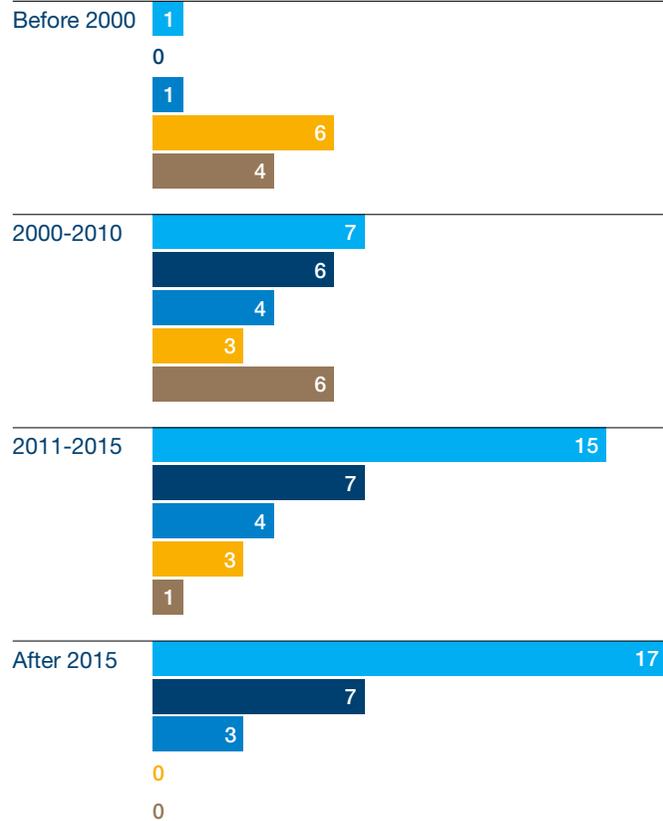
## Year of establishment



## Number of employees



## Company size per year of establishment



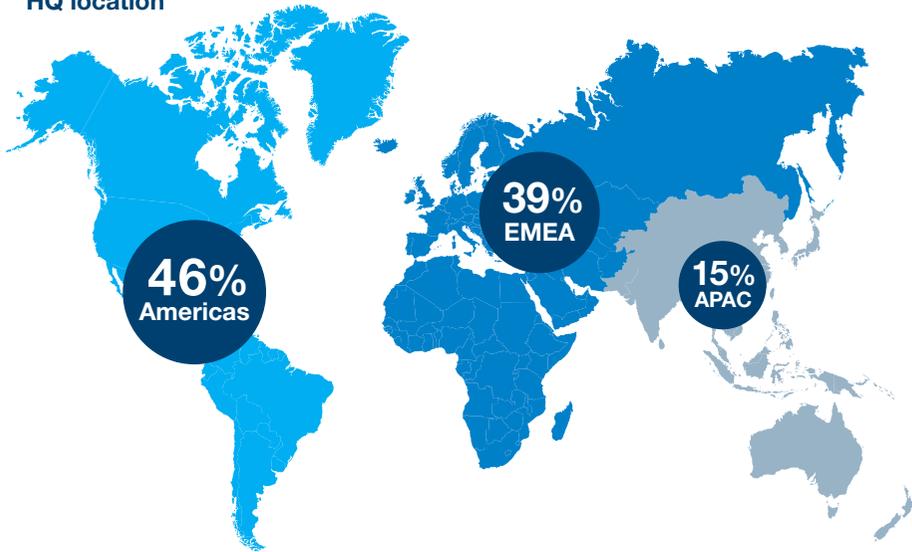
### Number of employees



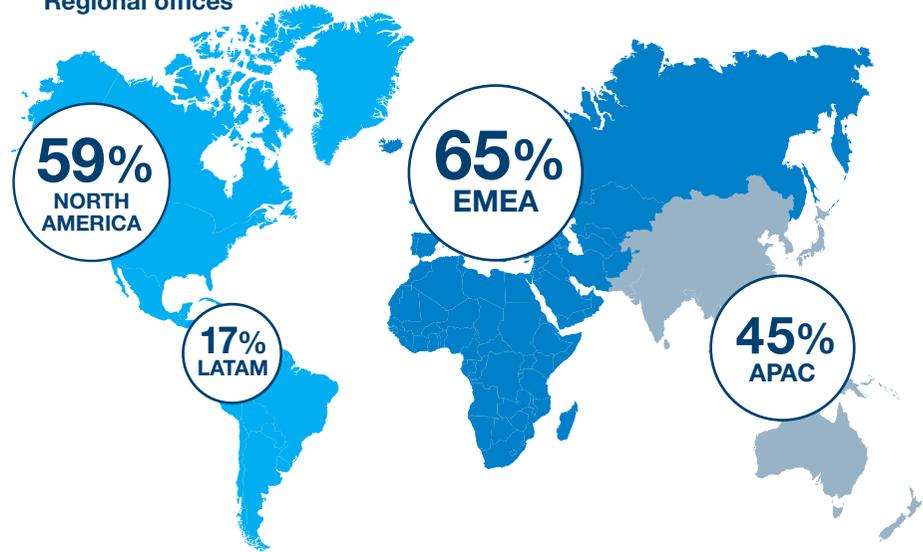
Companies are still developing and growing. Almost 80% founded within the last 10 years have less than 50 employees. Over 50% of companies founded more than 10 years ago are at least twice as big (>100 employees).

## Results and statistics (continued)

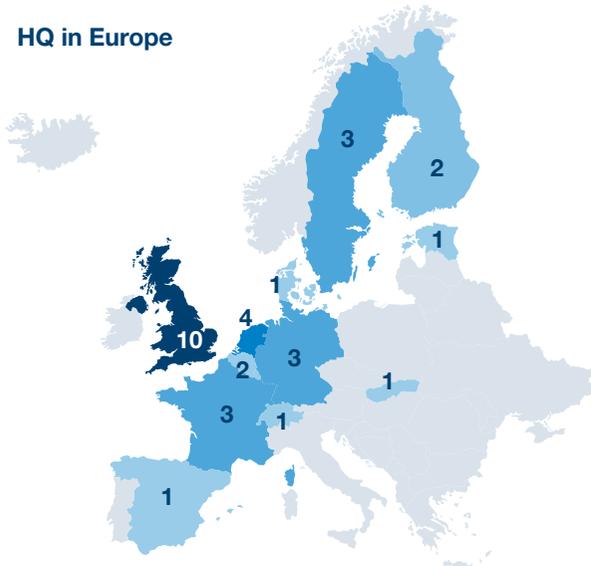
### HQ location



### Regional offices



### HQ in Europe

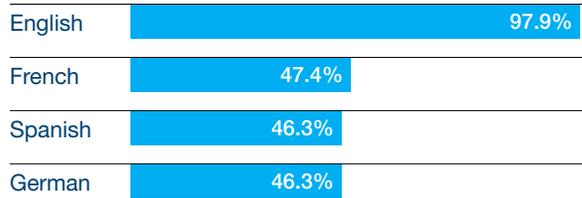


Americas are still leading in terms of company primary location, with EMEA following closer than in 2018.

More than 50% of companies originating from the Americas have regional offices in EMEA, while the opposite is true for only three out of ten companies founded in EMEA.

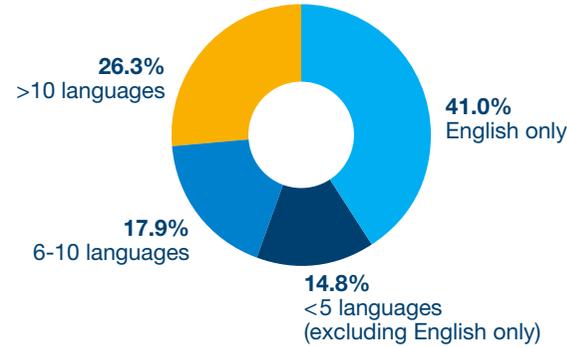
## Results and statistics *(continued)*

### Tools supporting a language

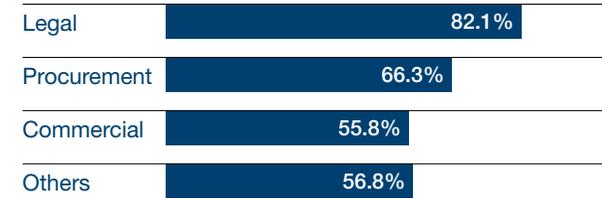


Twice as many companies support English as those supporting French, Spanish, and German. English is supported by almost all companies and is the only available language for four out of ten software options. More than half of companies are supporting less than five languages.

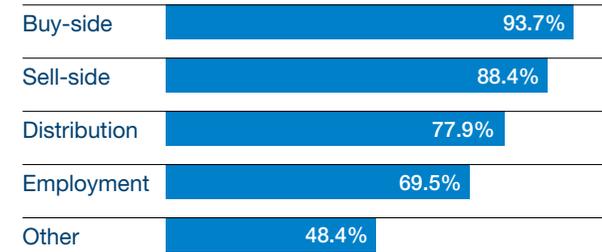
### Tools supporting more than one language



### Organization function supported

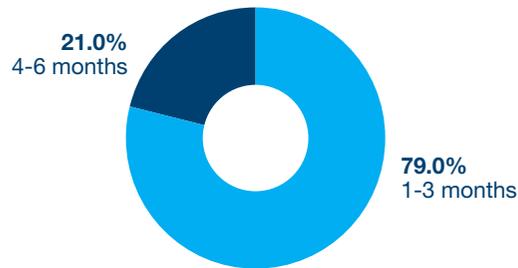


### Contract types



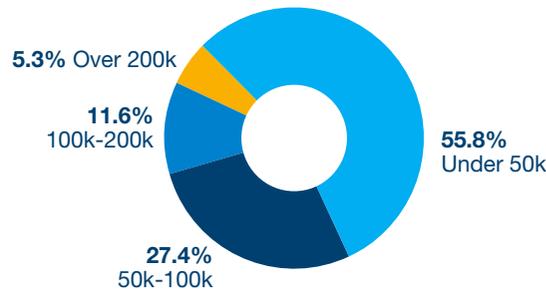
Legal, Procurement, and Commercial teams are still the critical groups targeted by CLM software providers.

### Average implementation time



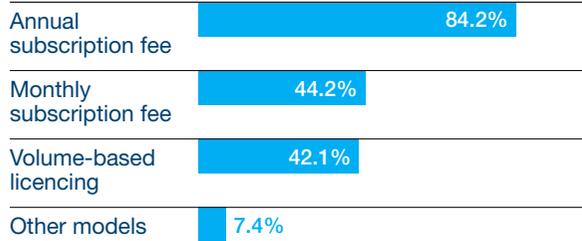
The majority of companies are capable of deploying their solutions relatively quickly, with over half demonstrating an average implementation cost of under \$50k.

### Average implementation cost USD



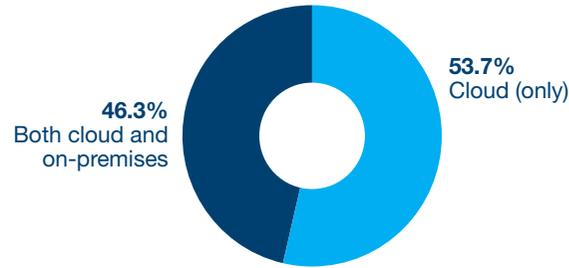
## Results and statistics *(continued)*

### Licensing model



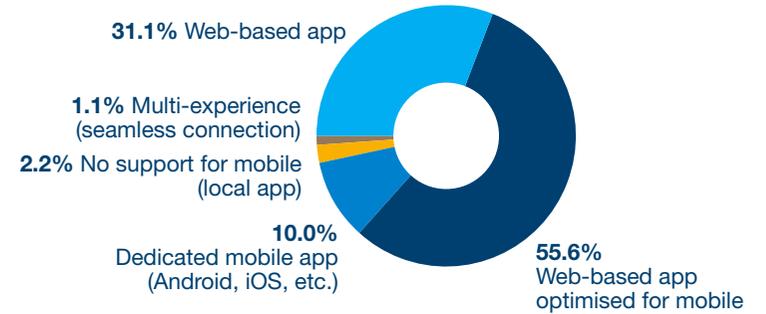
More than 50% of companies are offering subscription models only, with a third requiring annual commitment.

### Deployment model



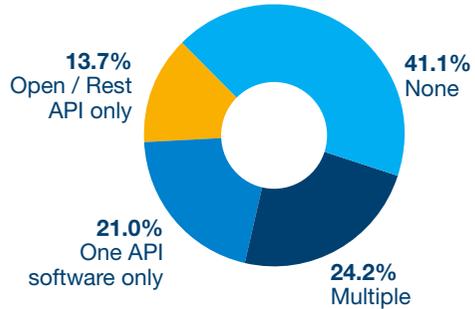
Pure on-premise solutions no longer exist. Everyone offers cloud deployment, with more than half being cloud-only.

### Mobile access supported



## Results and statistics *(continued)*

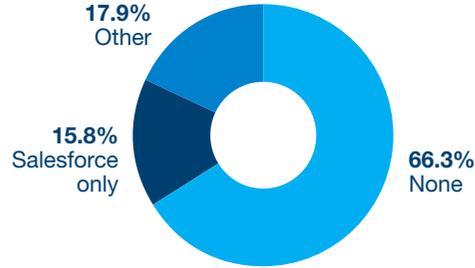
### Tools supporting API software



Open / Rest API	27.4%
Zapier	24.2%
Mulesoft	10.5%
Dell Boomi	9.5%

More than two out of five companies are not experienced in any API integration, with a third offering only one solution.

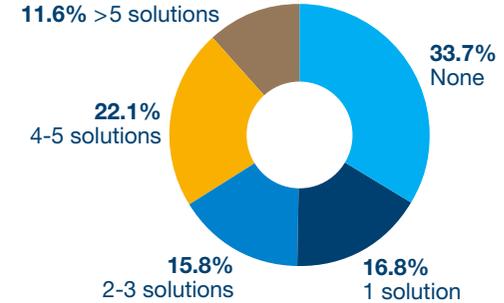
### Tools supporting CPQ software



Salesforce CPQ	29.5%
Apptus CPQ	10.5%
Oracle CPQ Cloud	9.5%

Two-thirds of companies are not experienced in any CPQ integration, while most of the remaining companies have integrated their software with Salesforce CPQ.

### Tools supporting CM/DM software

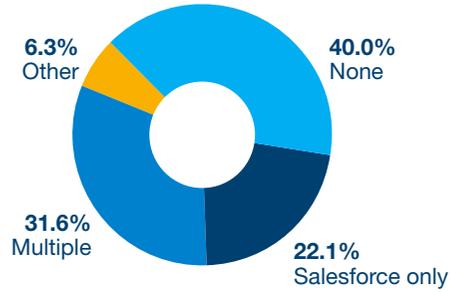


Microsoft SharePoint	50.5%
Google Drive	34.7%
One Drive	33.7%
Box	32.6%
DropBox	31.6%

More than half of CLM software providers are experienced in integration with Microsoft SharePoint and a third in other solutions like Google Drive or Box.

## Results and statistics *(continued)*

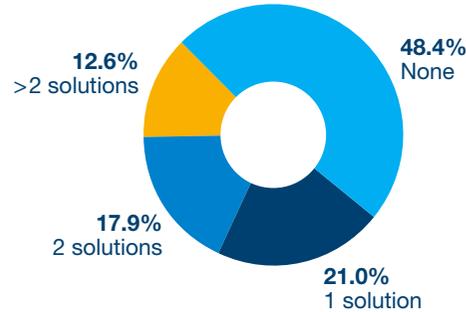
### Tools supporting CRM software



Salesforce CRM	52.6%
Microsoft Dynamics CRM	29.5%
HubSpot	17.9%

Two out of five providers are not experienced in any CRM integration, while almost everyone else supports Salesforce CRM.

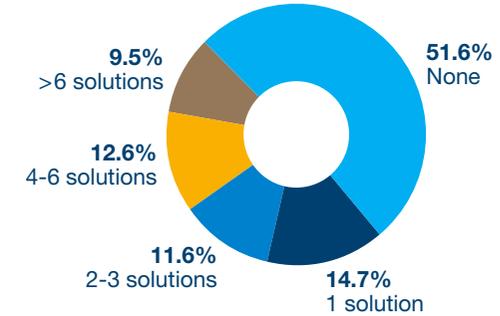
### Tools supporting e-mail client



Microsoft Outlook	49.5%
Google Mail (Gmail)	32.6%
MacMail	9.5%

Almost half of the providers are not experienced in E-mail client integration, with another half supporting MS Outlook.

### Tools supporting EPR software

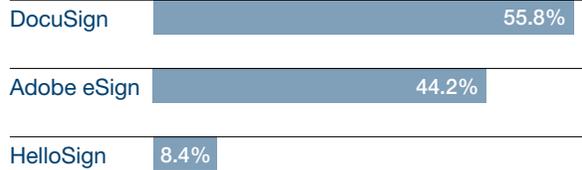
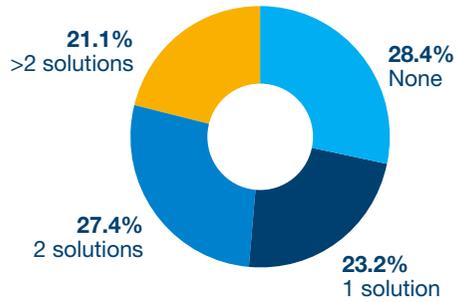


SAP ERP	39.0%
Oracle NetSuite ERP	24.2%
Oracle JDE EnterpriseOne	21.0%
Microsoft Navision	20.0%
Microsoft Axapta	17.9%

More than 50% of companies are not experienced in ERP integration, while almost 40% support SAP ERP. Within the top five, SAP is followed by both Oracle's solutions and two of Microsoft's ERP software.

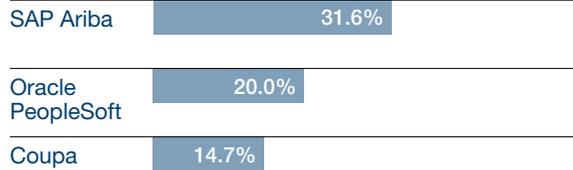
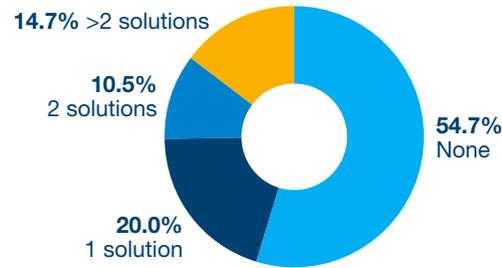
## Results and statistics *(continued)*

### Tools supporting e-sign integration



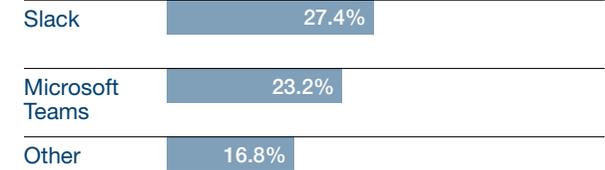
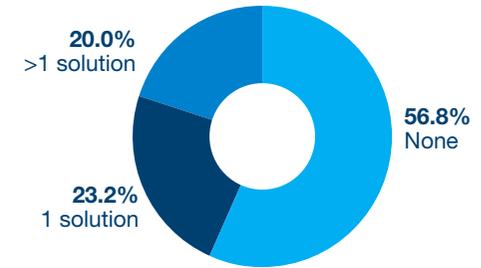
In terms of most supported type of e-sign integration, DocuSign and Adobe lead the market.

### Tools supporting FSCM software



Five out of nine providers are not experienced in any FSCM integration with SAP Ariba and Oracle's PeopleSoft leading.

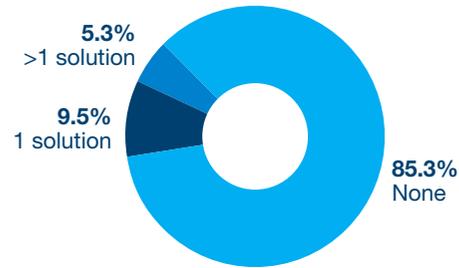
### Tools supporting IM software



More than five out of nine providers are not experienced in any IM integration, with Slack and Teams leading the rest.

## Results and statistics *(continued)*

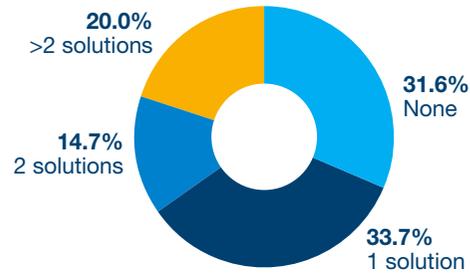
### Tools supporting video conference software



LogMeIn	8.4%
Skype for Business	4.2%
WebEx Meetings	4.2%

The vast majority of providers are not experienced in integration with any video conference software.

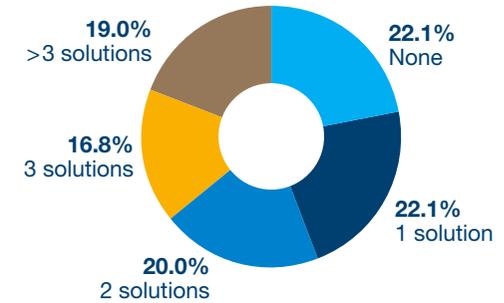
### Tools supporting ITSM software



Amazon Web Services	54.7%
Microsoft Azure Stack	35.8%
Google Cloud	25.3%

Five out of nine companies are experienced in integration with Amazon Web Services, with Microsoft Azure and Google Cloud being supported by more than a third and more than a quarter of providers, respectively.

### Tools supporting SSO software



SAML 2.0	56.8%
MS Azure SSO	49.5%
Okta	35.8%
Google Apps	28.4%

# Conclusion and future

Whether you are a small or large business, looking for a single capability or end-to-end support, focusing primarily on pre- or post-award phase of your contracting lifecycle, the diversity of the market means there will be a solution out there for you.

The CLM software market is no longer expanding as exponentially as it was ten years ago. However, new companies continue to try and revolutionize the way contract management tasks are delivered with unique approaches to the software capabilities they specialize in. This is often achieved thanks to the new advanced technologies (e.g. predictive analytics, blockchain, semantic analysis, etc.) being applied in the contract management space.

Over the last couple of years, we have seen CLM providers develop and make their solutions more comprehensive, but the concerns around customers' readiness to adopt new technologies remain the same:

- Are their clients capable of improving internal processes and managing more advanced technologies on their own?
- Are the users willing to overcome the fear or being replaced by the application and get ready for the change?
- Are there enough training materials and manuals that would benefit from the purchased solution?

With that in mind, before purchasing that best-in-class software with hundreds of features you may never really use, we would advise carrying out:

- A thorough review of company's commercial practices and its comparison with industry standards
- Improvement and simplification of company's internal rules, workflows, and processes.

Equipped with correctly defined and optimized rules and processes, tool selection will be easier.

We hope that the information gathered in this report will help define needs and the CLM software comparison tool will help narrow down the choice.

Successfully implementing a next-generation CLM software will help you streamline your contracting lifecycle, improve customer satisfaction, increase efficiency and deliver strategic value.



**The market for 'low-tech' tools is shrinking, so it's time for CLM providers to invest in new and enhanced automation technologies.**

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