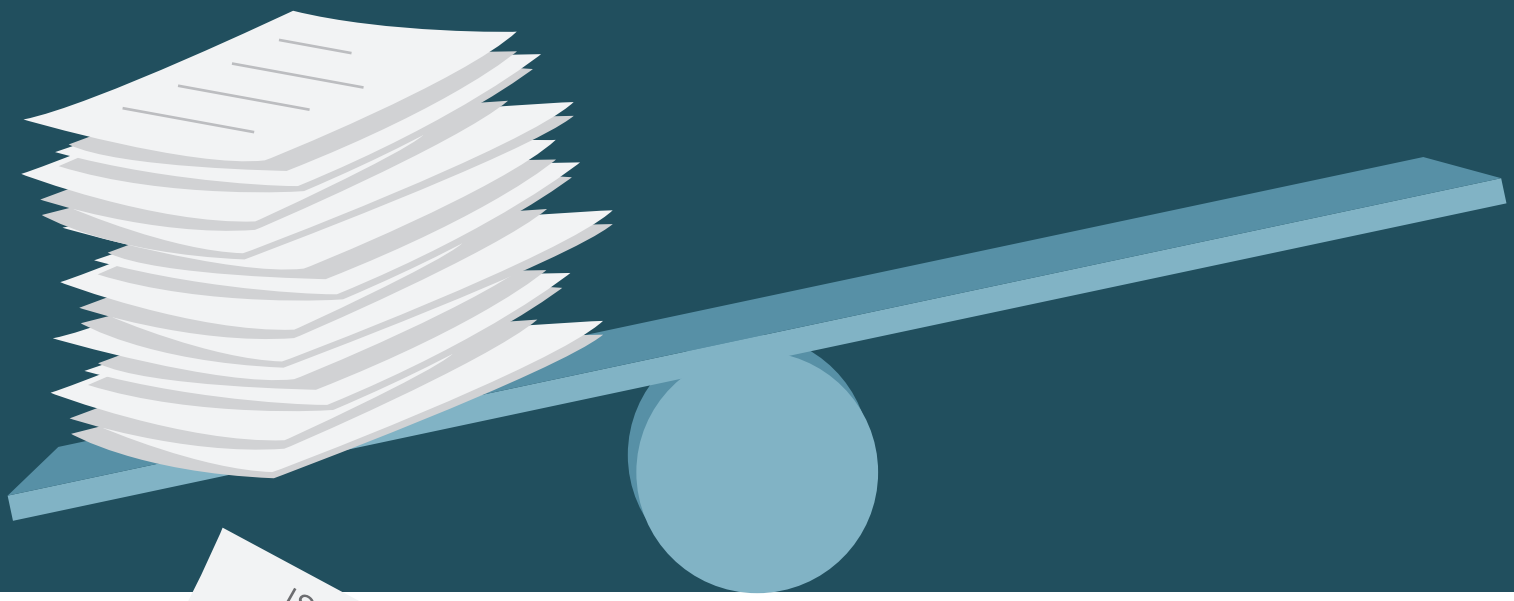
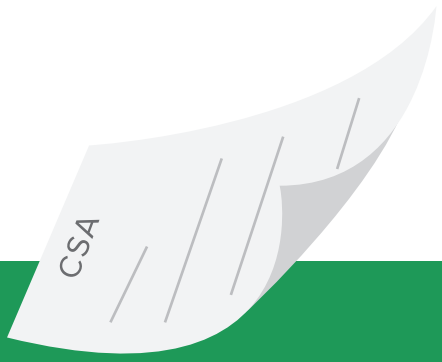


The Legal Documentation Data Challenge

Regulatory & Technological Tipping Points

THE FIELD EFFECT



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Executive Summary

Managing legal agreements has long been a challenge for many financial institutions. Perhaps the most pressing priorities right now are the ISDA Master Agreements and Collateral Support Annexes (CSAs). But there are many other agreement types including GMRAs, GMSLAs, ACAs, CTAs… the acronyms are endless.

ISDA published* a white paper in September 2016 which set out the documentation challenge thus:

"Despite a plethora of standard documents published for industry use, many documents are still customized between transacting parties. The benefits of this customization are now being questioned. There are opportunities for further standardization and digitization across the suite of existing ISDA documentation, from Master Agreements to definitions booklets and confirmation templates, which will drive more efficient processing and adoption of technology, both within firms and across the market."

In short, the problem is how best to extract accurate agreement terms from executed legal documents, and get the data to the systems that need it for key business processes such as on-boarding, trading, risk management and collateralisation. The two key goals are compliance with new regulations; whilst minimising operational risk and cost.

There is a weight of regulatory pressure pushing organisations into re-thinking their legal data management processes. Margin Requirements for Uncleared Derivatives (MRUD), The Banking Recovery & Resolution Directive (BRRD), QFC clauses in the US, BCBS 239 and potential implications of Brexit are all prompting action. BRRD outlines specific data-points which organisations must keep readily accessible and provide upon request to a regulator in the event of a default. MRUD has prompted a large-scale re-papering exercise increasing the volumes of agreements which need to be executed prior to regulatory deadlines for compliance. QFC clauses must be present in contracts with US based counterparties so firms should check that they have the right agreements in place. BCBS 239 reporting requirements contain data whose source will be a legal agreement. Brexit has the potential to trigger yet another re-papering exercise where governing law may need to be replaced for UK based contracts. Along with these regulatory drivers, there is also the continual drive to increase efficiencies, taking costs and overheads out of processes and driving improvements across the whole on-boarding and trading life-cycle.

Fortunately, technology offers new opportunities to reduce cost whilst meeting regulatory demands. Solutions have been around for a while which enable electronic discovery of agreements and "digitisation" via Optical Character Recognition (OCR). More recent artificial intelligence solutions apply business rules to extract structured data from legal agreements, whilst data governance and assurance services underpin confidence that the data is both trustworthy and compliant with regulation. With a clearly thought through architecture it is now possible to assemble and integrate technology solutions to substantially reduce manual processing costs, at the same time improving data quality and accessibility.

This paper examines the regulatory drivers, key business processes and emerging technology solutions for management of legal agreement data, and suggests a structured approach to addressing these challenges.

* ISDA Whitepaper: The Future of Derivatives Processing and Market Infrastructure

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Introduction

Documentation and data challenges occur at every stage of the legal agreement lifecycle:

- **Negotiation:** right now the industry faces a huge task of re-negotiating existing agreements to comply with the new Margining Requirements of Uncleared Derivatives (MRUD) regulations due in Q1 2017 – some say there are not enough lawyers to deal with the volume
- **Document assembly:** over the lifecycle of an agreement there are likely to be many amendments – how can firms ensure they have captured all the relevant terms from all the relevant amendments to be confident they understand the complete agreement?
- **Data quality:** extracting accurate structured data from unstructured word or pdf documents can be expensive even with document scraping technology due to the need to check data quality and remediate manually, often with costly legal or para-legal resources
- **Regulatory compliance:** even when agreement data has been extracted accurately, how can a firm be sure the terms comply with emerging regulations? And if they don't comply, how should firms prioritise which agreements should be amended first to minimise negative business impact?
- **Data publication:** once the data resides in so-called "golden sources", how does it reach the many applications and databases that need different subsets of the data to operate effectively?

Through our client project work we observe a distinct "capability maturity cycle". Different firms are at different stages of maturity.

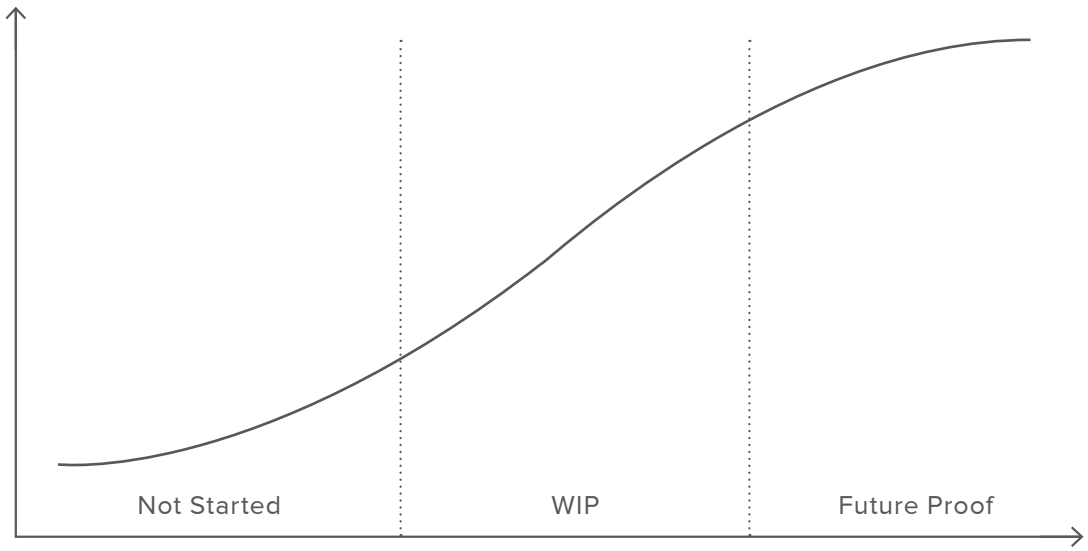

Figure 1 - Maturity Graph

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Introduction

Some organisations still negotiate, execute and extract data manually. This has led to warehouses full of paper contracts and PDF-scan databases of varying quality. As contracts contain the rules by which the firm governs relationships with their counterparts, some of this unstructured data must be manually captured and entered into collateral management systems, KYC & on-boarding systems etc. Manual processing of legal documentation data is prone to human error and lack of coverage. A typical ISDA master agreement, for example, contains upwards of 200 data-points of varying levels of complexity and, due to manual processing, some organisations only capture around 20% of these. Manual processing is also costly, with some organisations spending tens of millions of dollars per annum to maintain teams entering data.

Other firms have initiated one-off tactical projects to “scrape” the existing documents to create golden sources. This usually involves technology to help with discovering all the agreements that exist in the network of databases, combined with Optical Character Recognition (OCR) to render paper or scanned documents machine readable, enhanced with smart “AI” algorithms that extract structured data from machine readable text. Some additional manual remediation is always required to ensure the extracted data quality is high enough, to overcome poor quality scans or ambiguous drafting. But data quality will steadily deteriorate after the one-off “snapshot” unless business-as-usual process and controls are enhanced.

Technology and process improvement solutions are emerging rapidly. The capability now exists to eliminate paper based contracts from the legal documentation process altogether, with firms generating and agreeing contracts digitally and resultant data being held in a golden source documentation database. Mature data integration technology is now being re-purposed to pipe golden source agreement data into the architecture and systems that need it across the business.

Right now, the industry focus is on re-papering to achieve compliance. But after the March 2017 MRUD deadline the focus will switch to cost reduction through automation and business process streamlining.

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Regulatory Drivers

There are numerous existing and forthcoming regulatory and market developments which are raising the demand for high quality structured legal data. To illustrate the requirement, we examine briefly the data implications for MRUD, BRRD, QFC, BCBS 239 and set out a possible scenario for largescale re-papering prompted by a 'hard' Brexit.

Margining Requirements for Uncleared Derivatives (MRUD)

A significant challenge posed by Margin Requirements for Uncleared Derivatives is re-papering existing contracts to ensure that bilateral margining rules are reflected, along with the need for greater efficiency around the collateralisation of the trades booked. New and old agreements will still be valid for a period, so many more agreements must be managed. This has put pressure not only on banks but also legal service providers with one asserting that there 'aren't enough lawyers in London' to fulfil the re-papering obligation in time. Some agreements will already have been negotiated, others will not be renegotiated by the deadline, but will instead be left until the customer puts on their next trade.

However, negotiation is still largely paper based so a large backlog of static data has built up which must be transferred into consumable digital data. Timely transfer of this data into consuming systems will be a challenge.

Bank Recovery & Resolution Directive (BRRD)

The BRRD is wide ranging European legislation aimed at ensuring regulators can swiftly enter and either recover or resolve a systemically important institution. Key to this is the concept of 'living wills' i.e. all of the information required to ensure that the regulator understands counterparty exposure is readily accessible. The BRRD mandates that organisations 'understand their financial contracts'. This does not just mean static data from financial contracts but also market data such as collateral valuations and posted amounts. The annex published on 7th June 2016 outlines 43 different data-points which must be maintained for ready access by the regulator in the event of default. This annex is likely to be entered into the Official Journal of the European Union in Q4 2016. Organisations will, by implication, have very little time to ensure that their contract/legal data is fully available. There is no reporting requirement, but if the regulator asks for data an organisation is obliged to provide it. Prompted by the BRRD there is an incentive to maintain financial contracts data mapped to market data in a golden source to increase data quality and reduce cost.

Qualified Financial Contracts (QFC)

Qualified Financial Contracts as defined by the US Federal Reserve require the provision of certain contractual clauses for Global Systemically Important Banks (G-SIBs) trading out of or with US based organisations. The QFC clauses must be contained within any agreement between a UK bank and a US counterparty. New agreements will contain QFC clauses as appropriate there may also be some renegotiation/repapering required. Firms also need to be able to prove that their contracts contain QFC clauses.

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Regulatory Drivers

Risk Data Aggregation & Reporting (BCBS 239)

BCBS 239 requires firms to understand not only the process for risk aggregation and reporting, but also to understand the quality of the data being reported. Poor quality data extracted from legal documents could compromise the quality of risk reporting, particularly relating to netting agreements and collateralisation rights and obligations. If this data is incomplete or inaccurate aggregate reports could be affected.

Brexit

Very little can be said about Brexit until the negotiating positions and likely outcomes emerge after activation of article 50. However, if as seems likely, the UK does not remain part of the EEA, the implications around the continual use of existing and new European legislation and ability to passport will be significant. References to EU legislation in all agreements will be impacted and novation of agreements to different legal entities is likely.

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Key Business Processes

Whilst acknowledging the imperative of complying with the variety of regulatory demands, it is self-evident that firms must also continue the relentless drive towards cost reduction. The key to operational effectiveness is to streamline critical business processes end-to-end, and to design a target architecture that minimises the cost of execution. We have identified 4 critical business processes that have most significance for the target architecture.

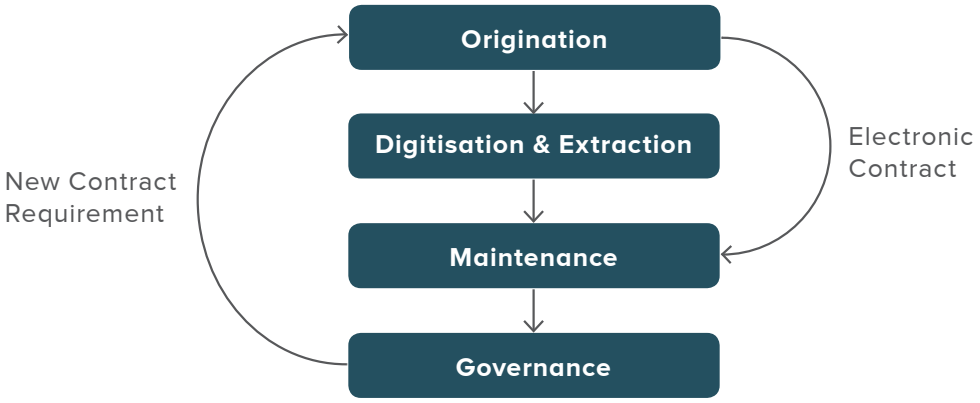

Figure 2 - Key Documentation Processes

Origination

A new relationship or a re-negotiation will prompt a requirement for a new document. The document must be created, negotiated, agreed, executed and stored. Until recently this process exclusively entailed paper based negotiation with wet signatures. However, emerging “smart contract” technology allows firms to agree documents electronically. The resulting on-line agreement is already in electronic form, removing the need for digitisation and extraction.

Digitisation & Extraction

Paper-based negotiation & execution results in physical documentation from which structured data must be captured and fed into consuming systems. Most of the current state manual effort is expended here, with resources digitising & structuring by re-keying data from physical documentation. Firms are streamlining this process through the use of a digitisation & extraction services (either built or bought), where documents are OCR’d and data extracted and structured based on business rules. Some manual remediation via a UI will still be necessary. Once digitised, data is added to a golden source repository for access downstream.

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Key Business Processes

Storage & Maintenance

Finding and interrogating legal agreements can be a significant challenge. In silo organisations documents may be stored (to varying levels of digitisation) across multiple different systems or even within an email chain. Implementing a process to store & version documents within a single repository, which can in turn be the master source from which data is called & updated, will ensure that the firm can be confident they are trading with valid information. It will also allow the firm to better track the interaction between amendments and their master agreements.

Governance

As data builds up over time it not only needs to be maintained but should also be regularly reviewed. As regulations change legal documentation data must be interrogated to ensure that the organisation is maintaining compliance and implementing downstream controls. A governance rules engine which can be updated with both regulatory rules and internal controls will generate exceptions and trigger remediation of contract data.

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Critical Functionality

Minimising the operating cost of executing these critical business processes requires a target technology architecture carefully designed to automate the key functional requirements. Through our work with the industry we have developed a model that describes the functionality required from the target architecture.

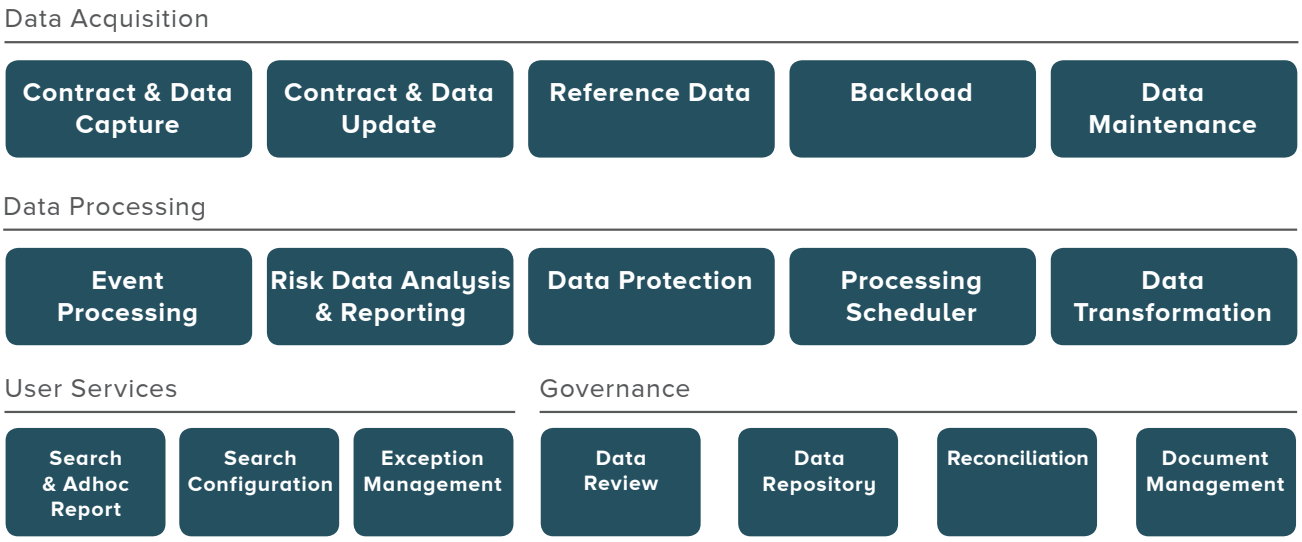

Figure 3 - High level functional model

Data Acquisition

- **Contract & Data Capture:** scans & digitises a contract. Extracts key data based on contract type rules.
- **Contract & Data Update:** management of contract amendment, versioning, maturity, cancellation and termination.
- **Reference Data:** industry reference data e.g. market data, instrument data, calendar's.
- **Backload:** bulk contract data acquisition extraction & codification
- **Data Maintenance:** setup & update of non-contractual data required to support the services

Data Processing

- **Event Processing:** applies changes to data stored in the repository.
- **Risk Data Analysis & Reporting:** assesses risk based on service rules that may change on a day-to-day basis
- **Data Publication:** provides the ability to publish information to external parties.
- **Processing Scheduler:** uses a calendar and predefined scheduling to execute specific processing
- **Data transformation:** conversion of data from one format to another supporting industry standard formats and custom transformation.

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Critical Functionality

User Services

- **Search & Ad hoc Reporting:** provides a comprehensive ability to access data stored in the repository using customised and predefined query and reporting criteria.
- **Service Configuration:** creates and maintains best practice governance models.
- **Exception Management:** raises and manages exceptions that require manual intervention or smart rules handling, includes workflow.

Governance

- **Data Review Service:** runs tests on acquired data against best practice governance models to identify breaches.
- **Data repository:** provides the secure repository of information to store the extracted data & operate services
- **Reconciliation:** compares two or more data sources to detect difference and inconsistencies.
- **Document Management:** stores and provides access to electronic documents providing versioning, change history and archiving.

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Third Party Solutions

In our experience there is no single software vendor who provides a total solution but a number of third party providers have developed software products and services to address different components of the architecture.

Each of course has its strengths and weaknesses. For example, some have invested in creating templates for document types such as ISDA Master and CSA agreements which speed up implementation. Some have based their solution on advanced flexible software architectures to provide a strategic solution which may reduce cost in the long term. Some provide an integrated manual remediation service, others leave that to you. Some provide an off-premise "black box" service – you send the documents, they send back remediated data – whereas others provide software-as-a-service solutions with attractive user interfaces that can be integrated with your firm's single-sign-on (SSO) capability. Some focus solely on "document scraping" whilst others add value with more holistic data assurance services. There are surprisingly wide differences in functionality – some solutions for example are unable to process tables embedded in word documents. Others do not easily understand the hierarchy of multiple documents that comprise a single agreement, or the multiple agreements that comprise a counterparty relationship. Some maintain the data extraction rules on your behalf, others provide open access to their rules engine so you can enhance the system to meet future requirements.

And needless to say prices – and even pricing structures - vary widely.

As is often the case, a combination of third party or in-house developed solutions is likely to be necessary. Which combination is right for you will be influenced by numerous factors such as your vision and objectives, your existing operational capabilities and infrastructure, your approach to build vs buy, and the strength of your business case. As always, it depends what you're looking for.

We expect the market to focus in the short term on regulatory compliance – particularly focusing on the Q1 2017 MRUD deadlines. But as soon as quick fixes have helped firms establish minimum compliance we expect the market to drive for long term cost reduction through more strategic approaches. These will include streamlining or outsourcing the BAU business processes to drive up the quality and reliability of the data.

We show (in alphabetical order) the major providers of software solutions that we are aware of, overlaid with functional scope. Each provider has been given the opportunity to correct any misunderstandings though not all responded. It is beyond the scope of this paper to list pros and cons of each solution, partly because a high level summary is likely to be misleading without understanding the context of specific requirements, and partly because solutions are improving all the time so any snapshot risks being out of date. We welcome input from all solution providers, especially any missing from our analysis.

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ALLEN & OVERY

A&O announced a partnership with Deloitte this year – MarginMatrix a new derivatives compliance system, codifies the laws across jurisdictions and drafts documents based on automated legal analysis.. They say one document would normally take three lawyer hours to complete but can be delivered in three minutes by MarginMatrix. Allen & Overy provide a tech enabled solution plus legal expertise in derivatives. Deloitte provide the managed service and quality assurance.

O

axiom law redefined

Axiom's IRIS™ technology was designed to enable the drafting, negotiation, approval/workflow and data management of high volume contracts (NDAs, SOWs, ISDA/CSAs, etc). IRIS™ is leveraged by Axiom's global team of ~750 contract specialists. Axiom utilise their employee base of technogists and legal experts as well as partnering with law firms to provide an end-to-end solution spanning legal advisory and industrialised execution services .

D O S R

exari

Exari allows you to create, negotiate, execute & extract any contracts using their DocGen™ product, then store them using Exari ContractsHub™. You can feed already available information from SalesForce and client data into Exari. Exari Contracts Hub™ offers: centralised contract repository, contract model, data capture, contract automation, reporting & analytics, workflow & hosting options. Exari holds a number of strategic partnerships including DRS LLP a legal services supplier

D O S R

Logical Construct Documents. Data. Done.

Logical Construct offers a service for extracting and assuring document based data. Their service includes industry standard data models for capital markets and OTC derivatives processing but the technology is capable of processing any document. The Logical Construct UI also includes a hierarchy structure, allowing the user map agreements to LEI structures. The platform also offers reporting and integration capabilities.

S D R

pwc

PWC has launched an initiative to create a technology and operational platform to provide data assurance for any regulated data process. We understand the initial launch will focus on data related to Margining Requirements for Uncleared Derivatives, such as ISDA master and CSAs. The service includes data remediation based in Belfast. The technology spans document digitisation and extraction along with data transformation and governance tooling to feed golden data direct into client systems for downstream use.

S D R

Seal

INTRODUCING SEAL VERSION 5: THE POWER OF SEAL FOR BUSINESS USERS

Seal utilise machine learning for both location and extraction. The new version of their software (version 5) allows business users to open contracts using MS word, and review, edits and repaper contracts with seal running in the background confirming standard and approved language. Documents are located across the network, then extracted and checked/remediated using the Seal UI and key data is reported using an analytics platform.

L D R S

SEMANTIC EVOLUTION

The Semantic Evolution offering is designed to allow definition of extraction rules by non-technical staff (i.e. a good BA). Users can define rules from standardised and semi-standardised documentation and create a repeatable extraction process on premise. Data is then exported via API or XML to be integrated within a wider business process. Semantic evolution also offer location, reporting & storage capability

L D R S

SMARTDX

SmartDX provides a cloud based document creation, negotiation and execution service that can be used as a stand alone portal or integrated with existing technologies. A machine readable version of the document is maintained during the negotiation so that the document, data and audit trail can be downloaded after execution. They partner with IHS Markit for a selection of ISDA documents but can support any document type. Smart DX has a document template library and is free to use for document recipients.

O S R

RAVN Power of Understanding

Applied Cognitive Engine (ACE) is an AI technology platform performing both discovery and extraction services. RAVN ACE can be applied across large content repositories to locate content which has evaded formal management. Machine learning AI techniques automatically extract salient information from contractual docs. Stored as metadata it aids querying and analysis to drive dependent processes. RAVN operate a 'recipe' system which allows the speedy creation of rules to extract different document types.

L D R

RECOMMIND is now **OPENTEXT**™

Recommind offers e-Discovery (Axcelerate) as well as digitisation, extraction & remediation (Perceptiv). Perceptiv extracts ISDA MA/CSA agreements and other derivs docs (including foreign languages). Perceptiv is often provided as an outsourced service, however they can also offer on-premise integrations including workflows into internal client systems. New client driven STP workflow process have been developed, tools allow clients to automatically submit, monitor capture and poll for published content export in a near real-time.

L D R

D Digitisation & Extraction
L Location & Discovery
S Storage
O Origination
R Reporting

Figure 4 - An overview of third party solutions

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Preparing For Change

There is much more to successful change than merely selecting the vendor(s). Business processes will be impacted and possibly outsourced. Existing capabilities should be leveraged and integrated. Data sources and consumers must be plumbed in. People's roles and responsibilities will change and controls must be effective. To put it another way, to deliver strategic benefit you need to think about the target operating model holistically.

Vision Objectives & Goals

It is critical to agree the vision and measurable objectives of the organisation as the first step in change preparation. This needn't take long but any initiative needs a clear executive steer on "what good looks like". Your vision, objectives and goals, along with drivers, pain point and impact analysis, will help steer design decisions and trade-offs.

Target Operating Model

Next comes the process model. We work with your subject matter experts to design target state business processes aligned to the vision, identifying the functionality and services needed to maximise straight through processing and minimise operational cost. The functional model informs a "logical" architecture that provides the context for decisions about re-using existing systems and data feeds, and building or selecting vendor(s) to fill in the gaps. As build / buy decisions are made the target physical architecture emerges. Work steps which are not fully automated must be executed by "actors", informing the target roles and responsibilities framework and driving user experience design. We also identify what data sets are consumed and produced by the work steps, to inform the data model. The result is a consistent, holistic target operating model aligned to the vision.

Vendor Selection

If vendors are to be evaluated, trade-offs will be needed. Some firms prefer a detailed evaluation involving long listing and short listing of vendors based on scoring and weighted criteria – a rigorous but notoriously slow and expensive process. Other firms prefer to minimise costs given limited budgets – which can lead to a fast but risky decision process. It is also essential to consider non-functional requirements such as performance and security. The most innovative solutions are sometimes provided by start-ups so due diligence on vendor financial strength is critical. The Field Effect can help accelerate and de-risk vendor selection based on our prior experience.

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Preparing For Change

Roadmap

The implementation roadmap models the major units of change, the “building blocks”, needed to deliver the target state. Each is modelled with high level estimates for effort, skill requirements, costs (opex and capex), quantified benefit, dependency and duration. There are usually many approaches to implementation, and this modelling approach allows different scenarios to be created and compared quickly. Each scenario generates a business case allowing easy comparison of key metrics such as ROI, NPV, IRR etc.

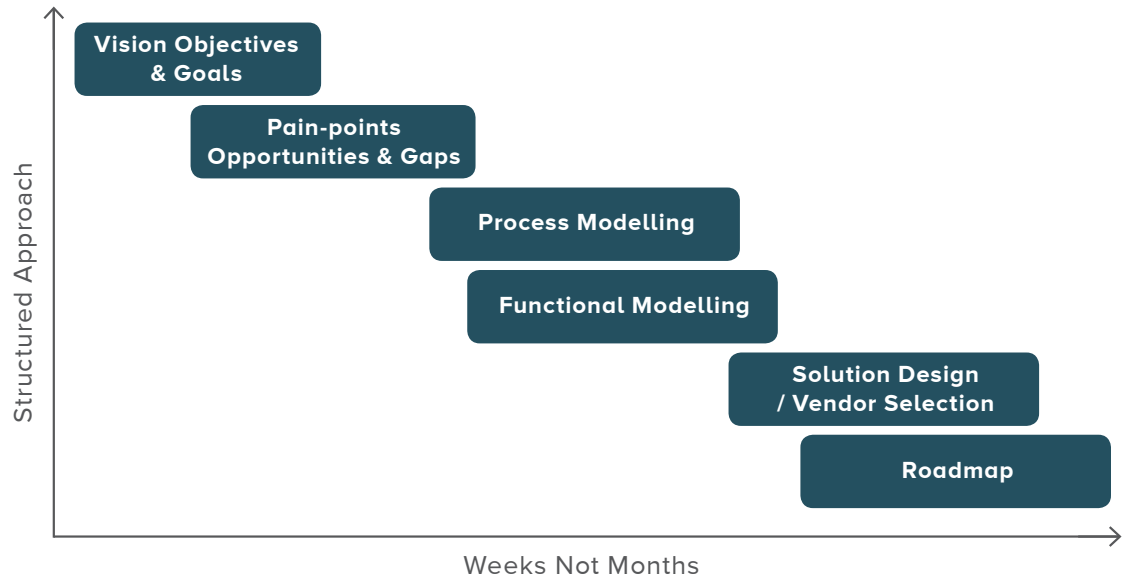

Figure 5 - Preparing for change

Making The Business Case

Manual data re-keying and management leads to significant cost, delay and error. Reducing or removing human extraction of data will reduce errors, improving downstream straight through processing.

It's not always easy to create a robust business case, but our experience shows that a good case for investment can be made by examining benefit areas such as the following:

- Reduced cost for manually searching documents
- Reduced cost of remediating data – using technology instead of lawyers
- Reduce operational risk
- Reduced cost for responding to regulatory demands for information and reports
- Reduced cost of collateralisation by ensuring collateral managers are using correct eligibility sets
- Reduced reputational risk

To conclude with another extract from ISDA:

Solutions can be developed to assist firms with scraping existing documents and recording the information electronically, but this only creates a point-in-time representation that may need continual reconciliation. It is therefore unlikely to guarantee 100% accuracy. Greater standardization and the utilization of technology to facilitate electronic creation and digital representation of these documents could provide significant benefit to industry participants, allowing recall and re-use of the data for additional purposes.

The Field Effect has attempted to set out in this white paper the regulatory drivers, key business processes and most importantly, some of the emerging technology solutions. We welcome feedback on this paper from market participants and solution providers.

We are great believers in the informal chat over coffee, and would be happy to share our more detailed insights with anyone grappling with these challenges. Give us a call!

The Field Effect has developed a cost-effective approach to change preparation called TFE-Modus. Based on experience of 70+ projects across many areas of banking, TFE-Modus provides a structured method for defining target operating model, roadmap and business case. TFE-Modus includes re-useable codified knowledge to accelerate client projects. The TFE-Modus tools include target operating model and roadmap data repositories with integrated visualisation tools to aid communication and buy-in. TFE-Modus de-risks strategic change planning whilst simultaneously accelerating project timescales.

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