

Introduction



Problem Statement

- ▶ Data extraction from Contract documents has been a manual/hectic process till now
- ▶ It takes a knowledgeable individual to spend lot of working hours to extract data from one document
- ► A document has to go through quality and finance team to be declared done
- ▶ Quality Team checks for the required contents/headings in the document i.e. format check
- ▶ Once cleared by the quality team the documents are passed to finance team for content checking

Our Objective

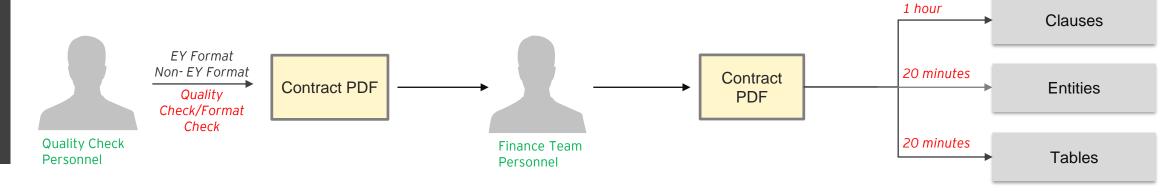
- ► To create a automated solution to extract contract clauses, entities and tables
- ► To create a scalable and robust solution to cater future requirements
- ► To create fastest and efficient solution (approx. one min for one document)
- ▶ To create an integrated solution that is easy to use



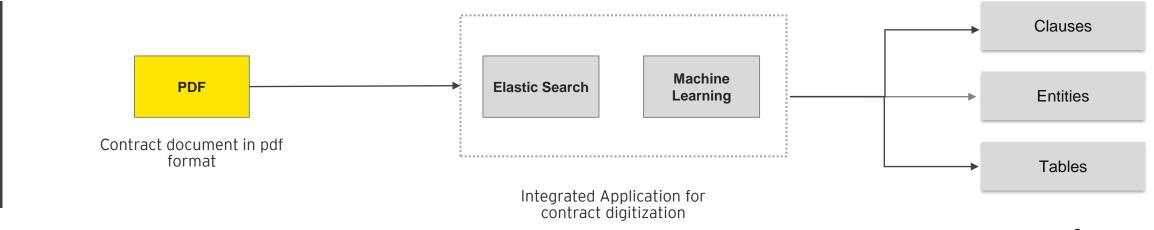
Current workflow | Proposed workflow



Illustrative workflow of current contract management process:



Illustrative workflow of proposed contract management process:



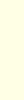


Solution description



Data Collection Phase

- Pdf contract is split para-graph wise
- · Csv file is created



Data Pre-Extraction/ ElasticSearch Extraction Phase/Modelling Phase

- ElasticSearch is a near realtime un-structured data extraction engine by Elastic Company
- The csv is fed to ElasticSearch Model and the data is stored in a index (similar to table in DBMS)
- Search queries are written to hit the above indexes in real-time
- The above search is performed on the basis of synonyms used for clauses in such contracts
- The query result is json formatted unstructured data



- The shortlisted data from previous phase is fed to Machine Learning Model to extract the final clause
- The shortlisted data is also fed to NER (Named Entity Recognition) model to extract entities such as Supplier and Buyer, Effective Date etc
- The pdf is directlt fed to third solution to extract tables from the pdf

Testing Phase

 The trained model is tested for similarly formatted contracts and validated the results against manually generated reports

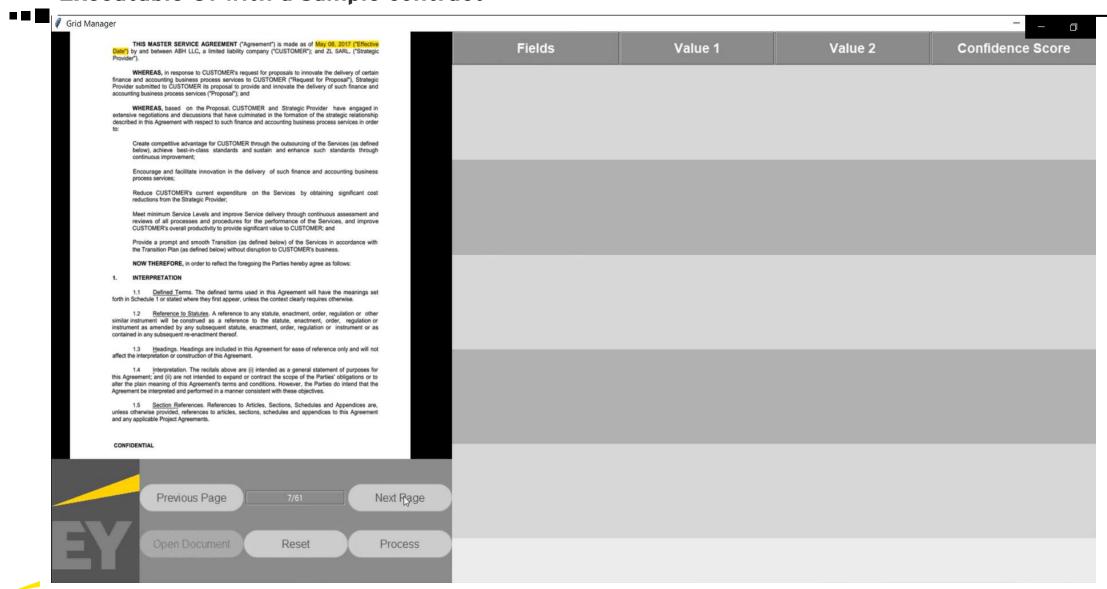








Executable UI with a sample contract



Processes results- Entities, Clauses, Table



Grid Manager

- 1.6 Group Members, As Services are to be provided and paid for by Strategic Provider Group Members and CUSTOMER Group Members, respectively, all references to Strategic Provider Group Construed to include the applicable Strategic Provider Group Members providing the Services, and all references to CUSTOMER will be construed to include the applicable CUSTOMER Group Members receiving and paying for Services, in each case whenever the context so requires or admits.
- 1.7 Waiver of Presumption. The Parties are sophisticated and have been represented by coursel during the negotiation of this Agreement. As a result, any presumption or rules of construction relating to the interpretation of contracts against the drafter thereof should not apply. The Parties hereby waive any such presumption or rule.

2. AGREEMENT STRUCTURE

2.1 General. This Agreement sets out the Parties' agreement as to the provision of Services from Strategic Provider or a Strategic Provider Group Member to CUSTOMER or a CUSTOMER Group Member.

2.2 INTENTIONALLY LEFT BLANK.

- 2.3 Project Agreements. With respect to each Service and each Country or group of Countries, if applicable, the Parties may agree upon or will cause, where relevant, a Project Agreement to be executed by the appropriate Strategic Provider Group Member(s) and the appropriate CUSTOMER Group Member(s) to (i) provide and app for Services pursuant to this Agreement, respectively and (ii) set forth any supplementary provisions either (a) required by local law ("Local Law Matters") or (i) appropriate due to local practice, provided, however, that any changes due to local practice must be approved in writing by the CUSTOMER Contract Executive and Strategic Provider ("Approved Local Provisions"). Project Agreement sexuated pursuant to the terms of this Agreement will be subject to this Agreement and effective no later than upon the commencement of the provision of Services by Strategic Provider Group Member in such Country.
 - 2.3.1 The CUSTOMER Contract Executive and the Strategic Provider Contract Executive must approve each Project Agreement prior to its execution by the appropriate CUSTOMER Group Member and Strategic Provider Group Member. Any Project Agreement or modification to a Project Agreement will be of no force or effect unless the CUSTOMER Contract Executive and the Strategic Provider Contract Executive have previously approved it in writing.
 - 2.3.2 The Parties will cause their respective Group Members that enter into any Project Agreement to observe and perform the obligations of such Party as set forth in the Project Agreement. Each Party will be liable for all obligations and liabilities accepted or incurred by its Group Members under each Project Agreement.
 - 2.3.3 Each Project Agreement will be deemed to be a separate divisible contract both in respect of this Agreement and in the case of other Project Agreements, except to the extent specified in this Agreement.
 - 2.3.4 The Project Agreement will be interpreted in accordance with New York law and practice and in contemplation of New York law applying, except in respect of personnel and pension issues relating to Transferring Personnel and other Local Law Matters. Any Project Agreement and related schedules, including changes to the Agreement and related Schedules, an incorporated or copied into the Project Agreement will be amended only in writing and as necessary to reflect the specific legal requirements and business practices from time to time applicable in the relevant jurisdiction in order to produce the legal and business result intended by the Parties in this Agreement and must be approved by the CUSTOMER Contract Executive and Strategic Provider, as well as the applicable CUSTOMER and Strategic Provider, as well as the applicable CUSTOMER and Strategic Provider Group Members.

CONFIDENTIAL

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Fields	Value 1	Value 2	Confidence Score
Document Type	MASTER SERVICES AGREEMENT		80.63
Customer Name	ABH LLC	ENTIT	IES 78.21
Supplier Name	ZL SARL		65.97
Effective Date	May 08 2017		75.69
Renewal_Term	15.3 Unless CUSTOMER provides notice that it intends to renew this Agreement this Agreement will not automatically CUSTOMER may renew this Agreement and all or any Agreements for up to three (3) three - year Renewal Terms		93.78
Previous	Submit	Next	Table

Processes results- Entities, Clauses, Table

0	Grid Manager
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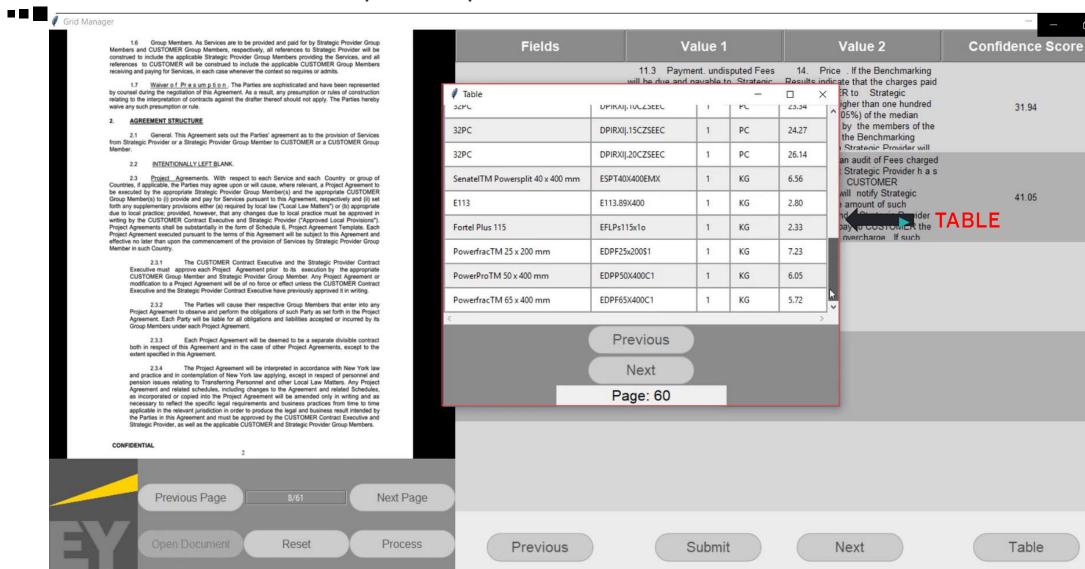
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Fields	Value 1	Value 2	Confidence Score
Limitation_of_liability	23.5 Limitation on CUSTOMER CUSTOMER's aggregate liability for damages to Strategic Provider during the entire Term of the Agreement will not exceed the lesser of Strategic Provider's actual proven direct damages or the total Fees for the Ten. (10.) months	23.2.5 payments fines penalties or interest imposed by a governmental body or governmental regulatory agency and other direct damages in each case solely to the extent attributable to Strategic Provider's failure to comply with CLISTOMER's approved Standard	59.25
Key_personnel	7.3.3 If CUSTOMER decides that the Strategic Contract Executive or any of the KABC Personnel should not continue in that position then CUSTOMER may in its sole discretion and upon notice to Strategic Provider require removal of the Strategic Provider Contract	7.2 KABC . The individuals specified in Schedule 9 will be the initial KABC Personnel. All KABC Personnel will be dedicated to the CUSTOMER account for the time set forth in Schedule 9. Additional KABC Personnel may be set forth in the applicable Project Agreement	84.56
Governing_Law	32.1 . This Agreement will be governed by and construed in accordance with the laws of the London and applicable U. K. federal laws without giving effect to its principles of conflict of laws.	32.2 Project . Unless otherwise agreed in a Project Agreement and approved by the CUSTOMER Contract Executive each Project Agreement will be governed by and in accordance with the laws of the State of New York and applicable U.S. federal laws without giving effect to	99.99
Confidentiality	18.2 Confidentiality. Without prejudice to any additional requirements contemplated under the Security Protocol the recipient of Confidential Information will maintain its confidentiality at least to the same extent and manner as the recipient protects its own Confidential	18.3 Unauthorized Use or . Without limiting either Party's rights in respect of a breach of this Article each Party will (i) promptly notify the other Party of any attempted or actual unauthorized possession use or knowledge of the other Party's Confidential Information by any person	90.64
Commencement_date	13.1 . At any time after twenty four (24) months following the relevant Service Commencement Date and thereafter no more frequently than once during any ensuing twelve (12) - month period CUSTOMER may request a benchmark of the cost and	3.1.2 the services functions and responsibilities being performed within the twelve (12) - month period prior to the Effective Date of the Project Agreement by CUSTOMER's personnel or contractors whose services functions or responsibilities are displaced or	77.34

Processes results- Entities, Clauses, Table



31.94

41.05

Table