Can drones & AI-enabled document analysis support audits in the future?
Showcases on new internal audit methodologies
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Can drones & AI-enabled document analysis support audits in the future?

Showcase content

1. Setting the scene
2. Scaling the use of drones in the audit process
3. Demo - Drones
4. AI-enabled document analysis
5. Demo – Contract review analysis
6. Q&A
Can drones & AI-enabled document analysis support audits in the future?

Digital enablers and analytics are the basis for various applications in audit

<table>
<thead>
<tr>
<th>Descriptive Analytics</th>
<th>Advanced Analytics</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interactive Dashboards</td>
<td></td>
</tr>
<tr>
<td>Innovative Reporting</td>
<td>Intelligent Knowledge and P&amp;G Management</td>
</tr>
<tr>
<td>Precise Risk-Benchmarking and Assessment</td>
<td>Contract (Risk) Management with AI</td>
</tr>
<tr>
<td>Real Time Controls Monitoring</td>
<td>Virtual Assistant (Chat/Voice Bot)</td>
</tr>
<tr>
<td>Customer/Vendor Segmentation</td>
<td>Customer Sentiment Analysis</td>
</tr>
<tr>
<td>Predictions of process failures</td>
<td></td>
</tr>
<tr>
<td>Document Classification (Text Mining)</td>
<td>Fraud Detection</td>
</tr>
<tr>
<td></td>
<td>Compliance Controls Automation</td>
</tr>
<tr>
<td></td>
<td>Risk Impact Modeling</td>
</tr>
</tbody>
</table>
Scaling the use of drones in the audit process
Scaling the use of drones in the audit process

Overview

► EY tests the use of drones as part of the auditor’s digital audit capabilities
► Central use case: Inventory counts
► Cloud-based real-time asset tracking platform powered by the Internet of Things (IoT) sensor network
► Result:
  ► Real-time analysis of product inventory, items or QR/Barcode/rack labels
  ► feed information directly into the audit system
Scaling the use of drones in the audit process
Demonstration by video

Demo-Video 1
Drone working in a lab environment.

Demo-Video 2
Drone working in a real warehouse environment.
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Use cases & benefits

Use cases include

- **Car plant based** audit by autonomous drones: automated count of vehicles enriched by image recognition technologies (e.g., for type, colour)
- **Warehouse based** audit with autonomous drone using image and object recognition tools like OCR, QR-/Barcode to collect stock information

Potentials public sector case

Pilots show

- Time reduction by 50–60% on site and 80–90% in back office
- Cost reduction up to 80%
AI-enabled document analysis — Contract Review in Audit
AI and Machine Learning — Why now?

- AI is a label given to computing systems that show a form of intelligence through interacting in ways that seem ‘natural’ to humans and learning from those interactions.

Machine Learning development is fueled by the availability of big volumes of data (Big data) the machine can learn from, and by the cost reduction of processing power and accessibility (Cloud).

Deep learning algorithms have further progressed in recent times.

- Is this the letter R?
- Yes
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AI Intelligence and Machine Learning applied to business document reading & interpretation

► Is this clause containing the lease commencement date?
► Yes
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Contracts’ review analysis — how does it work?

1. Define business terms

- Lease commencement date
- Lease payment — Amount
- Renewal Option?
- Service component?
- Etc.

For the prototype, we’ve defined 38 business terms relative to IFRS 16,

Examples:

1. Define business terms
2. Manually analyze a sample document
3. Conceive the AI system
4. Simplify the user experience

Some promising results: 80% accuracy from just 100 contracts

Manually analyzed 100 lease contracts, obtained an accuracy level greater than 80% to find the relevant clauses, developed a user experience that simplify the interaction AI — business expert.

AI Scientist  
Business expert
Contracts’ review analysis — how does it work? (contd)

2 Use

1. Digitize contracts
   Collect and digitize the documents using optical character recognition (OCR) software.

2. Identify relevant causes
   During the contact analysis the tool suggest some relevant clauses and highlight related sentences.

3. Extract needed information
   The user extracts the required data.

4. Continuous learning
   Improve results with the AI-expert interaction.

- 4. Continuous learning
- 3. Extract needed information
- 2. Identify relevant causes
- 1. Digitize contracts

Use

1. Digitize contracts
2. Identify relevant causes
3. Extract needed information
4. Continuous learning

- Collect and digitize the documents using optical character recognition (OCR) software.

- During the contact analysis the tool suggest some relevant clauses and highlight related sentences.

- Improve results with the AI-expert interaction.

- Business Expert
- User

- Name of Lessee: GGP-BRIGHT MALL LLC

The use of this clause of the **Lease** is by the **Landlord** and **Tenant**. The **Tenant** agrees to pay the **Rent**. The **Landlord** and **Tenant** agree to the **Lease** and **Tenant** agrees to the **Rent**.

** Contracts' review analysis — how does it work? (contd) **
Contract Review in Audit
Demonstration by video

Demo-Video 1
Document analysis

Demo-Video 2
Additional Features

Live Demonstration

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Contracts’ review analysis — Application Examples

- Analysis of IFRS 16 impact
- Revenue calculation
- And more:
  - Internal control testing based on contracts
  - Substantive tests based on contracts
  - Validation of completeness and accuracy of databases (customers, suppliers, etc.)
  - Etc.
Promising results

- AI tool currently assists audit teams in reading and identifying key data points within a contract. Audit teams required to approve data points to be extracted
- Results achieved so far include:
  - Approx. 60 data points in Real Estate contracts managed
  - Time to read contracts reduced by 60%
  - Gain confidence in AI technology to support audit procedures
- Next step for CRiA:
  - Cover any type of contracts/documents
Thank you
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