How Box Evolved from Simple AI to Agentic Systems for Enterprise | LangChain Interrupt

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Box's CTO, Ben Kus, shares how their AI document extraction system hit a wall when customers brought real-world complexity—300-page documents, 500+ data fields, and OCR challenges that broke their simple AI approach. After initially deploying to 10 million pages successfully, Box completely re-architected their system using a multi-agent agentic approach that separated complex problems into specialized sub-agents. This transformation not only solved their scaling issues but made their system dramatically easier to evolve and update for enterprise needs.

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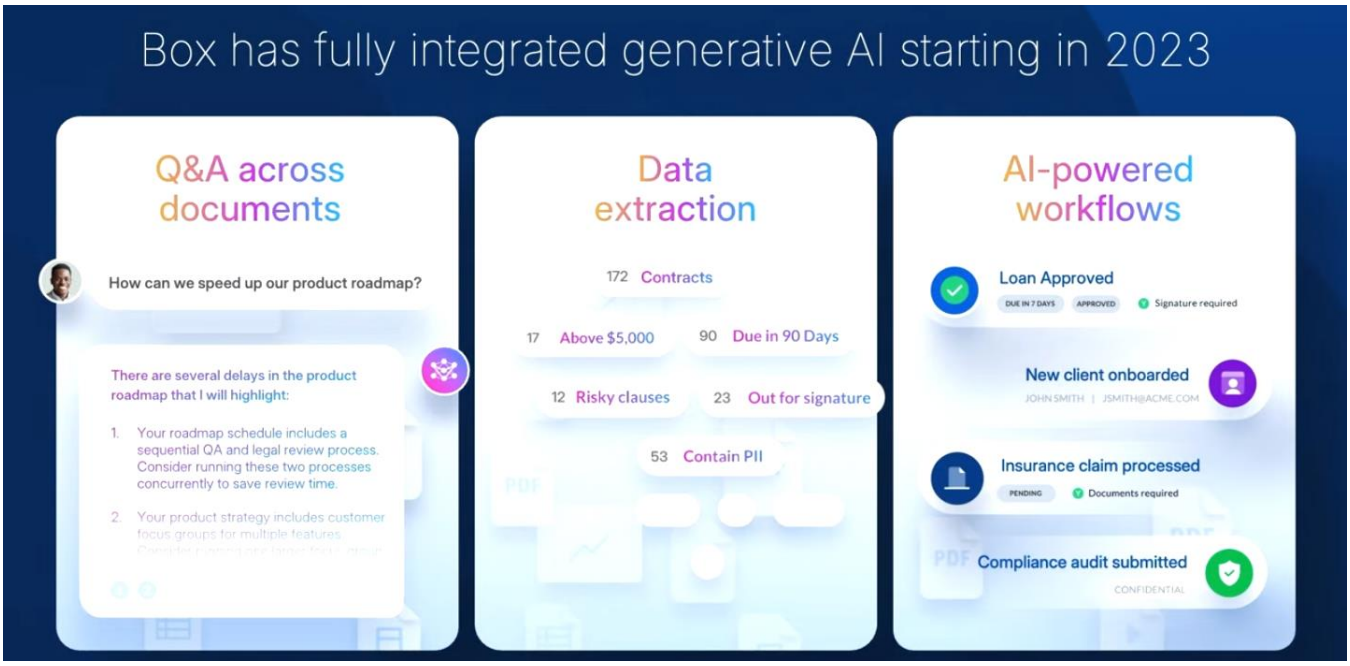
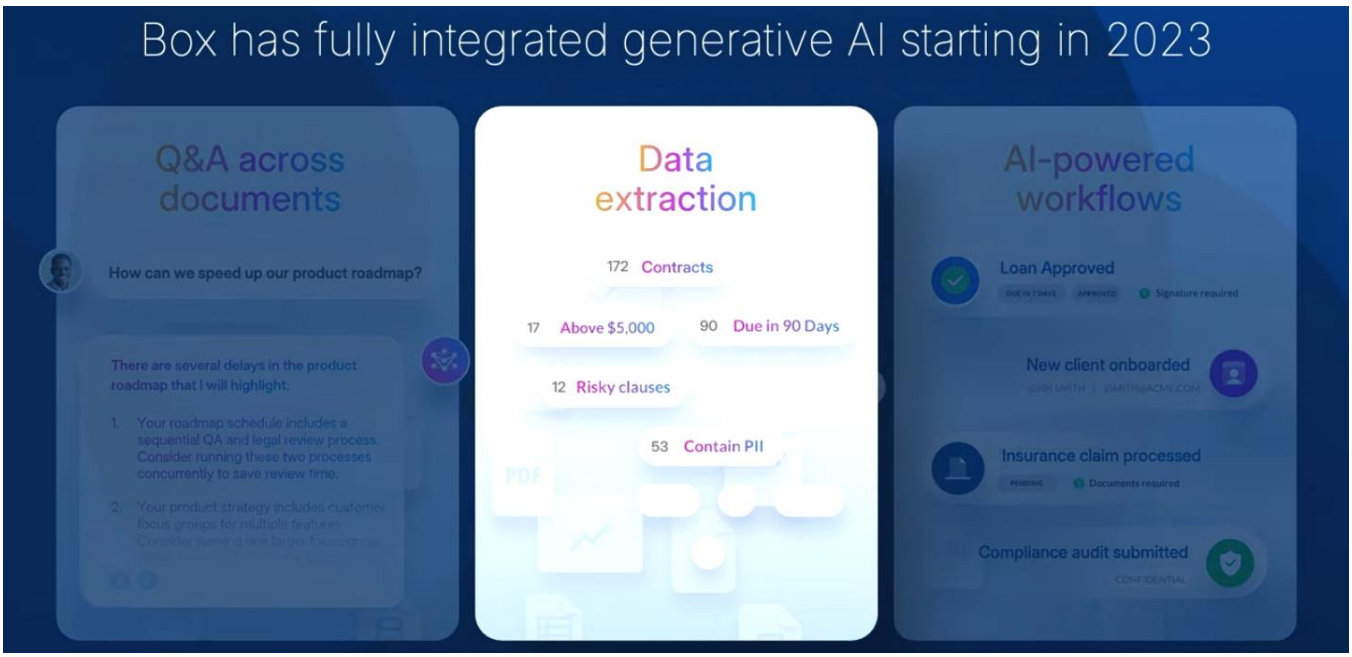

Box has fully integrated generative AI starting in 2023
Q&A across documents
How can we speed up our product roadmap?
There are several delays in the product roadmap that I will highlight:
1. Your roadmap schedule includes a sequential QA and legal review process. Consider running these two processes concurrently to save review time.
2. Your product strategy includes customer focus groups for multiple features.
Data extraction
172 Contracts
17 Above $5,000
90 Due in 90 Days
12 Risky clauses
23 Out for signature
53 Contain PII
AI-powered workflows
Loan Approved
DUE IN 7 DAYS
APPROVED
Signature required
New client onboarded
JOHN SMITH | JSMITH@ACME.COM
Insurance claim processed
PENDING
Documents required
Compliance audit submitted
CONFIDENTIAL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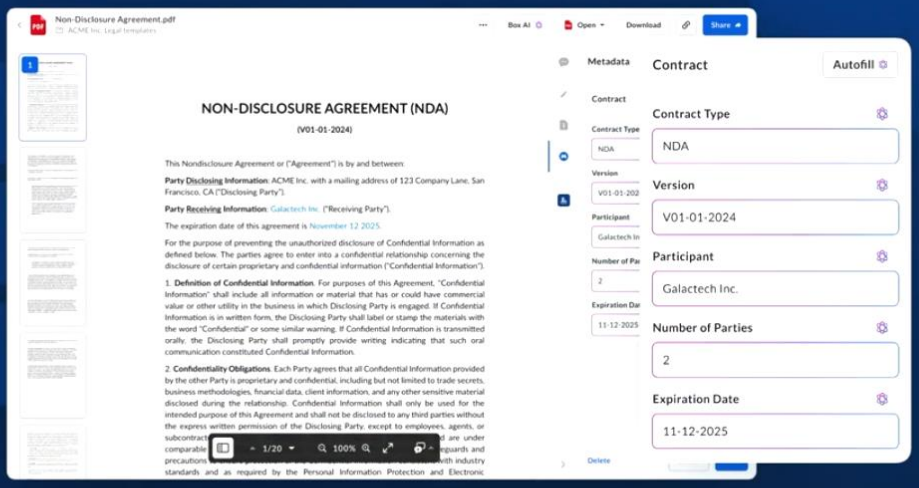
Metadata extraction enables AI to understand and process enterprise content effectively

- Powering AI with context-rich content
- Automating workflows with intelligent content understanding
- Transforming content discovery and knowledge Access



Over 90% of enterprise data is unstructured, with critical metadata buried deep within

Before GenAI, extracting data was too hard for most enterprises

- ML-based techniques too expensive to develop
- Didn't work well for free form text data
- Not responsive to data format changes

Building generative AI data extraction

First version

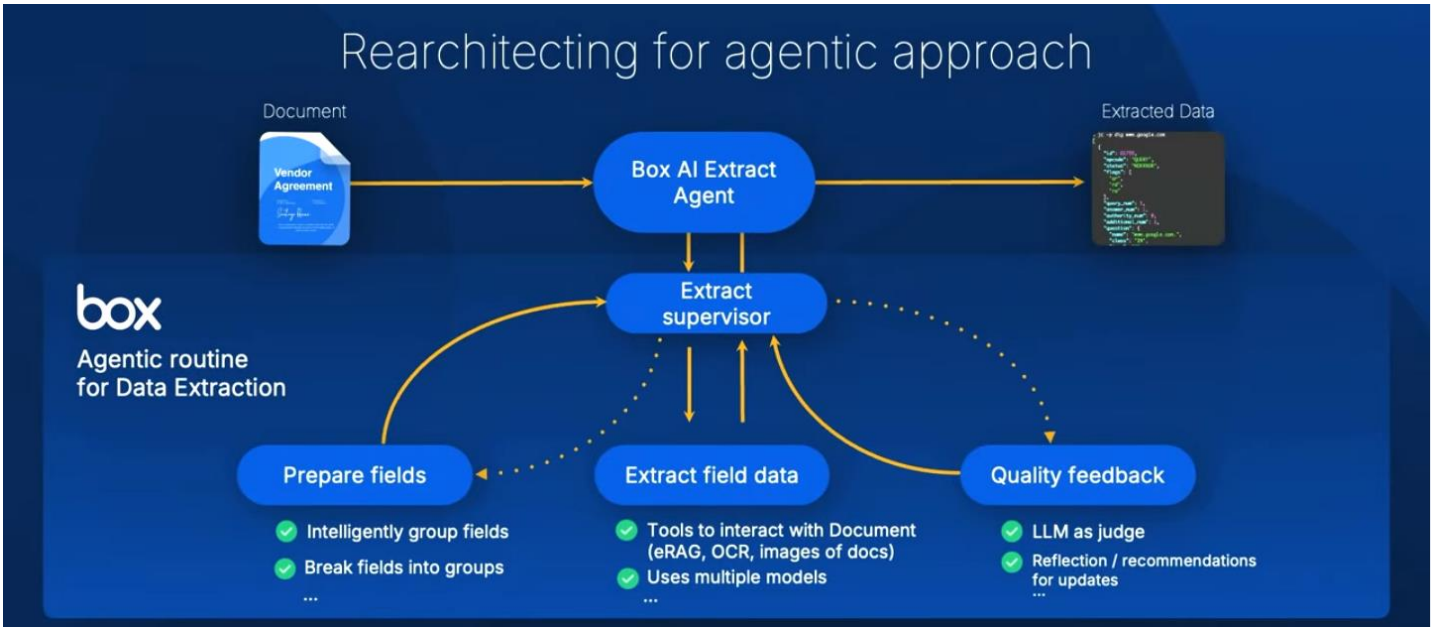
- Performed well
- Flexible, based on reasoning capabilities of LLMs
- Built around a specific AI model
- Required ML-based pre-processing for OCR

Building generative AI data extraction

Challenges

- Started getting longer / more complex docs
- OCR would sometimes lose valuable info
- Too many fields would overwhelm the LLM
- LLM-as-a-judge could determine that sometimes it was wrong on its first pass

Rearchitecting for agentic approach



Lesson learned

Build agentic architecture early!

Cleaner platform abstraction

Separation of high-scale infra work vs. improving specific agent actions

Ease to evolve quickly

Easily adapt as new techniques and AI models become available

Improved engineering AI culture

Helps engineers think agentically (state diagrams, Tools, A2A, ...) as part of overall ecosystem