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How Chatham Financial Increased Process Capacity by 400% with Indico IPA

"Rather than a human-driven assembly line with everyone sitting at the conveyor belt with their hammer or chisel, Indico allows us to reimagine Chatham's offering as a pipeline, where a PDF comes in and key components are automatically extracted before it comes out the other end."

– Dr. Christopher Wells, Chief Data Scientist with Chatham Financial

Chatham Financial Finds Process Automation Gold with Indico

For a single document approval process Indico IPA cut costs by 75% and increased capacity by 4x.

Chatham Financial delivers risk management advice and technology to more than 3,000 organizations around the globe. In doing so, it has to process tens of thousands of complex, unstructured documents each year, a fact that had it looking for ways to automate at least some of that chore.

The company found what it needed in Indico's Intelligent Process Automation (IPA) platform. As an initial use case Indico enabled Chatham to automate one step of a common document review process, saving 15 minutes of processing time for each document. That reduced the cost to perform the transaction by 75% while increasing process capacity by 4 times.

In what is typically a "six eyes" process, meaning three people have to review the document, Indico takes away one step, or set of eyes, Wells says. And Chatham is just getting started.

75% reduction in cost
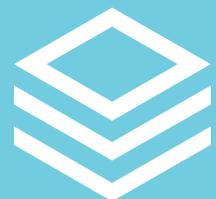
4x increased capacity

Chatham's AI Journey

When Chatham began its artificial intelligence journey in 2018, the initial idea was to build its own process automation application. "A few PhD types and I downloaded TensorFlow and started building tools and labeling documents," Wells says. He borrowed an in-house user experience (UX) expert in hopes of making it usable by business people.

The company had already been putting data into data lakes and warehouses to make the data more accessible and flexible. "But trying to build an entire natural language processing engine from scratch was not feasible, given the time and resources we needed to spend," he says. The job is all the more difficult because of the unstructured nature of most of Chatham's documents, meaning a templated or robotic process automation approach would not suffice.

Christopher first encountered Indico at a start up fundraising event in Philadelphia, where he had a chance to meet with Indico's founder and CTO, Slater Victoroff.

Slater described a breakthrough approach using Transfer Learning to "understand" documents without tedious and complex rules or templates. Slater further explained that this could be accomplished with as few as 200 samples for training the Indico "DocBots".

> Before long Chatham brought Indico in for a demo, during which the group was immediately impressed with Indico's user interface, which they deemed crucial to the effort.

"That's really where you make contact between the data, your intellectual property, and the machine learning," he said. "If the subject matter experts can't or don't want to work with labeling the data, or if it's too hard to do, the venture is going to fail."

After a thorough evaluation process, including comparing Indico to what Chatham could build itself, Wells and his team decided to bring in Indico for a proof of concept (POC) test.

The Indico Advantage

1 Empowering your process owners

Intuitive point and click interface for unstructured content classification, extraction, and workflows

Initial Process Automation Results

The POC use case, which is now in full production, addressed an interest rate cap confirmation process. It involved a centralized SQL Server that acts as the source of truth for much of Chatham's processes as well as a blob store that holds PDFs of confirmations and other unstructured content. Chatham provided the 200 samples for training, and Indico was able to build a highly accurate model in just a week. The low training data requirement combined with the fact that Indico IPA was able to produce such impressive results in such a short time had Chatham convinced.

Wells' team built a middle layer using Jupyter, an open source workflow engine, and Excel, with Indico sitting in between them as the natural language processing (NLP) layer. When a confirmation comes in, it's uploaded to the document store. That triggers a process whereby the Jupyter-based application pulls the document down and feeds it to Indico, which "reads" the document. It is able to identify and pull out key terms – a step previously performed by a human – and enter them into the Excel spreadsheet.

The output is then fed to Compass, a custom application Chatham built years ago, which uses a script to put together an email to a subject matter expert (SME), who reviews the finished document.

But, thanks to the IPA application, instead of having to go through the document line by line to find key terms and compare them to what the customer is reporting, the expert merely looks at the email. It is formatted with green or red checkboxes that indicate whether the document is good to go or requires further review.

> For each document, the automated process saves 15 min. of what would otherwise be human processing time, resulting in the 75% cost savings and 400% increase in process capacity – meaning it takes far fewer people to do the same job.

The results were so dramatic that Chatham was quickly able to deal with a backlog of more than 1,000 documents that had built up over the years.

"Once we rolled out our first version of this model, that backlog got cleared in one day, one 24-hour period," Well says. "That was the first time we were without a backlog of documents to process in I think two decades, which was a huge victory. Bottles were popped on that day, for sure."

Fast forward to today and Chatham has five IPA use cases in production and five more expected by year-end – no mean feat in 18 months for a mature organization with well-defined processes for adopting new tools, Wells notes.

The Indico Advantage

2 | Freedom from Templates and Rules
Quickly build custom machine learning models with just 200 examples

'Beneficiaries of our own success'

Chatham now has more than 50 internal Indico users, a testament to Indico's ability to turn business people into "citizen data scientists."

In fact, using Indico has improved the dynamic between Chatham business users and data scientists. Whereas at first SMEs questioned the ability of an automated tool to do their jobs, that has morphed now that the company has seen success after success with the tool. Key to that is the fact that business people are using the Indico tool right alongside the data scientists, "not just throwing their data over the wall to the data science team," Wells says.

"That collaborative piece, having one platform that we're all working on together, has really helped," he said.

With a number of successful projects under their belt, Wells' team now has projects flocking to the door. "We've been beneficiaries of our own success," he says. "We have ongoing projects with every business vertical, and most practice area teams – accounting, transaction document process and client onboarding."

Through it all, he notes, his data science team has added only one employee.

"We were able to handle building out all the infrastructure and the use cases, help business owners make the case to executive team leadership, deliver on model training and all the data pipelining necessary to connect our systems to Indico systems while only growing our headcount by one, which I think is a huge success," Wells says.

The Indico Advantage

3 | No Black Boxes

Award-winning AI Explainability and intuitive document validation UI deliver unmatched output accuracy

The Future of IPA at Chatham

Looking ahead, he says Indico's IPA platform creates options for Chatham to further streamline its processes.

For example, the initial document review process the company automated is but one step in a multi-step process, he notes. All documents of that type undergo review by three different employees along the way. The company has successfully automated the middle step, taking away one set of eyes, but the door is now open to automate processes upstream, where the client uploads the document, as well as downstream, where final checks are conducted.

Wells is optimistic. "We've pushed Indico hard on both our use of the models and types of things we're doing. We've trained hundreds of models across many use cases, production and otherwise," he says. "We've really stretched it to its limits, and it's held up."

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Indico is a provider of Enterprise AI solutions for intelligent process automation. Our focus is on helping to automate tedious back-office tasks, improving the efficiency of labor-intensive document-based workflows, and extracting valuable insights from unstructured content, including text and images. Our breakthrough in solving these challenges is an approach known as transfer learning, which allows us to train machine learning models with orders of magnitude less data than required by traditional content analysis techniques. With Indico, enterprises are now able to benefit from the dramatic advantages of machine learning in a fraction of the time. For more information, visit: www.indico.io

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The Indico Advantage

4 Expert Advice and Support

Consultation and support for workflow design, implementation and optimization