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AI FOUNDRY

By James Robertson

The mortgage space has set the ball in motion toward achieving end-to-end, fully digitized environments, and there is no turning back. However, without the emergence of the fintech industry and fintech companies, lenders would not have the vision or the technical capabilities to take on such an endeavor. Within the banking and financial services industry, mortgage and lending in general is one area that is particularly document-intensive and costly. “In the ‘80s, a typical mortgage consisted of about 75 pages, in 2019 that number stands at around 900,” points out Stephen Butler, Founder and President of Massachusetts-based AI Foundry. Given the way fintech has radically transformed other parts of financial services and heightened customer expectations, carrying out mortgage processing in the traditional, manual, paper-based approach is a show stopper with today’s consumers who want instantaneous information, goods and services.

How have we gotten to this point? On one hand, there is the spiraling number of loan applications that yearns faster approval. While on the other hand, there is the mortgage workflow that largely remains submerged within stacks of documents (digital and analog), with employees stuck with doing pre-and post- requisite tasks of sorts that builds up as the days go. Two adjectives describe the situation best: time-consuming and productivity-eroding. Ultimately, slower procedures can cost lenders

their revenue while taking a big bite off their operational expense. Not to mention the chances of human errors and its undesirable consequences that result from the dangerous combination of monotony and pressure. State and federal regulations, compliance requirements, etc. have compounded this problem.

“Not Your Grandfather’s AI”

...is how Butler describes the technology stack in use by AI Foundry, which can lessen the burden associated with capturing data from varying types of mortgage documents, agreements, and paper-based collateral.

“**The Cognitive Business Automation Platform can singlehandedly undertake work that is equivalent to 10 loan processors**



Taking a step back, looking at the so-called “grandfathers’ era” of AI, one can observe that in the late ‘70s to ‘80s—after the supposed jaw-dropping demonstration of AI in the preceding decades—the technology was cutting edge, but it lacked real-life use cases to make it useful. The tremendous optimism of AI researchers failed to live up to the potential and as a result, funding for AI projects disappeared. However, despite the discrepancies in the public’s perception of AI in the late ‘70s, new ideas were explored in logic programming, commonsense reasoning, and many other areas. Through a rugged journey, today, the market witnesses widespread adoption of predictive algorithms across various industries and a rising number of AI patents used in virtually every aspect of business and consumer’s every day lives.

Akin to that of AI, the evolutionary timeline of several technologies—such as the cloud, automation and even autonomous vehicles—involves both the “high on hype and short on realism” and “proven capabilities fostering wide-spread adoption” phases. The success of an innovator, in this context, is based on how they recognize and position themselves at the

intersection of these phases, to further drive developments. Acting on this wisdom, AI Foundry has been a game-changing entity in the fintech space with their distinctive patent-pending, intelligent machine vision solution revolutionizing the mortgage industry.

The Cognitive Mortgage Automation Solution

AI Foundry’s Cognitive Business Automation Platform and the Agile Mortgages solution, which is built on top of the platform automates manual, labor-intensive mortgage processes, enabling lenders to dramatically accelerate the lending lifecycle. The solution can seamlessly scan and infer data from the many different mortgage loan application documents. The “automation element” within the solution adopts agile processes to facilitate a proactive and streamlined workflow all the way from the customer-facing front end to analysis-centric back end of loan origination systems. What’s interesting is that AI Foundry has incorporated some of the same leading-edge AI and machine vision technology that is used for cutting-edge image recognition applications such as real-time facial recognition or autonomous vehicles.

Traditionally, to simplify document-intensive workflows, mortgage lenders have been relying heavily on optical character recognition (OCR) technology, which at best is good at digitizing text. Besides, OCR is ‘hardware-ish,’ and its operation depends largely on the physical dimensions of a document or page. “So, if a user is looking for a key piece of text, they need to tell the OCR machine to move down the page to, say, two inches, and then move across by another inch to find that text. A lot of that does not work very well in actual practice, as the forms and the documents vary widely. Even the basic W2 forms have at least 17-18 variations,” mentions Arvind Jagannath, Director of Product Management at AI Foundry. Also, traditional OCR technology takes around 9-10 seconds to scrape all the text from an image, and its accuracy in data classification (identifying the type of document) and extraction (identifying specific data points in the document) can only reach up to 80 percent. One can imagine how labor-intensive the task of processing would be.

In contrast, AI Foundry’s tech-stack can classify documents in sub-seconds while delivering outputs with human-level accuracy in the range of 90+percent.

An Analytics Engine at its Finest

The other powerful prong of the solution is its capability to predictively automate the mundane tasks of loan origination personnel, be it a processor, underwriter, quality control, or

compliance manager—with the document (data) comparison capability. The intelligent robotic agents can provide the needed industry domain context to help deliver significant process automation along with improvements in classification, extraction, and data accuracy. A great benefit to users is that once a rule and robotic agent are created, they can easily be reused in the future, thus streamlining the need to continually rewrite commonly used rules. The resulting human-free automation allows loan processors to spend more time on tasks that demand their skills to ultimately accelerate their organizations’ lending lifecycle. Mortgage processing that takes weeks can be done in days via the cognitive business automation platform. The solution is capable of extracting information from documents within e-mails, front end loan application portals, and file storage units of loan origination systems. The Agile Mortgages solution’s user interface can track the status of loan documents based on customizable rules and data validation, and even has functionality provisions for exception management and manual review. It can also send notification and alerts to appropriate personnel regarding the processing of the mortgage, such as pointing the need to seek evidence of payments or supplementary documentation from borrowers. “It is like an ongoing process where, as the borrower keeps submitting documents, the platform will keep analyzing them in context to the loan process,” adds Jagannath. “Literally 100s of data fields can be pulled in and filled into the different worksheets that underwriters and other staff may be using. The platform can singlehandedly undertake work that is equivalent to 10 loan processors,” adds Butler.

The offering is built with a model-driven, microservices architecture that enables rapid design, development, and operation. To further sharpen their platform’s capability of recognizing document formats, instantly and on the



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go, AI Foundry has built a continually updated library of document models pertaining to variations of mortgage documents. “This community model keeps growing in terms of the coverage of documents and accuracy by the minute. Any customer that comes on board gets the benefit of all of these improvements that we infuse into the model on an ongoing basis,” mentions Jagannath.

Another key differentiating factor of the platform is its easy integration—via REST APIs—with existing systems within an enterprise. The Agile Mortgages solution along with the platform can be deployed as a SaaS model or on-premise and its self-service functionality

allows lenders to add customizations and extensions. All necessary and periodic updates on the platform can be done quickly. Recently, the company also announced the platform’s smooth bi-directional integration with Ellie Mae’s Encompass® Digital Lending Platform.

Evidently, AI Foundry, with its all-around solution has carved a niche for itself in the mortgage space, one that caters to the origination, secondary, and service markets.

Building a Future-Proof Solution

Having established a customer base consisting of both large and mid-size lenders, AI Foundry, under Butler’s leadership has begun exploring the scope of repurposing their robust technology stack for other document-intensive market segments such as healthcare. The company will continue to expand the capabilities of its solution by leaving no stone unturned in its quest to provide a holistic solution.

Butler concludes by sharing insights on the future of the mortgage industry, where he points to the scenario of digital mortgage, where lenders along with their investments in fintech would have achieved the zenith of integrability, and the need for paper/documents would be completely negated by direct data feeds. To use a sports analogy, it’s half-time in the digital transformation game for the mortgage industry. Many of the processes are digitized with digital avatars of documents and data feeds into LOS systems but there is still 2 quarters to go to win the game. In other words, the industry is coming close to another interjection between “high on hype, short on realism” and “proven capabilities” phase, which Butler has already identified. It’s only a matter of time before the combination of lenders and fintech companies develop an integrated solution set that is solely based upon the premise of digital transformation and AI Foundry plans to be the winner when all is said and done. **BC**

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Top 10 Mortgage Technology Solution Providers - 2019

Be it a commercial or a personal loan, today's borrower has myriad options—and all that, at his fingertips, thanks to technology. With rich and robust technologies, consumers can now select the best loan provider that fits their needs, goals, and financial ability. Financial institutions for their part are taking advantage of this golden age of technology to know where to be when, selling which loan product to which customer. Consequently, every other aspect of the entire lending lifecycle, such as NBFC functions, ledgers, balance sheets, loan demand generation, and report creation for receipts, payments, and profit/loss, is jumping on the bandwagon of digitalization.

AI technology has started exhibiting its prowess in offering consumers a new level of convenience. The technology will soon be able to tell brokers when borrowers are ready to act. Brokers and lenders will be able to proactively reach out to

borrowers, rather than wait for them to approach them. With blockchain, borrowers will be able to close on mortgages in shorter periods using decentralized ledgers and more secure processes. Digital mortgage platforms with APIs will help facilitate communication between systems, including title, escrow, and more, facilitating borrowers to close on loans within a day or two, instead of weeks. As lenders prepare for 2019, it is imperative for them to understand the capabilities of next-generation technologies and leverage them to understand borrower needs to optimize their banking experiences.

Through a distinguished panel comprising CIOs, CTOs, VCs, and industry analysts, along with Banking CIO Outlook's editorial board, we have evaluated and shortlisted the mortgage technology solution providers that have significantly stood out as some of the most prominent players in the industry.

We present to you Banking CIO Outlook's "Top 10 Mortgage Technology Solution Providers - 2019."

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Stephen Butler
Founder & President
Arvind Jagannath
Director of Product
Management

Offers a holistic, AI-powered solution stack for all-round processing of mortgages



Company:
AI Foundry

Description:
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Key Person:
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