

Hyperautomation in Digital Mortgage Operations





Executive Summary

Hyperautomation, the balancing of Intelligent Automation with human judgment, has demonstrated exceptional results in mortgage lending, from predicting behavior to streamlining operations and elevating the borrower experience. The best strategies employ a “start small” approach, then scale to broader application as the strategy is refined. But don’t forget the human factors component: it is important to inform employees of your vision and how their roles will evolve. This promotes adoption and leads to best practices.

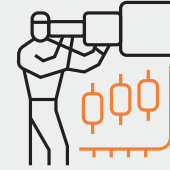
In this paper, we explore practical and successful applications of hyperautomation and discuss strategies for deploying technology and expanding its use in lending. Finally, we offer recommendations for best execution of a hyperautomation strategy.

The promise of AI and ML: Opportunity "Sweet Spots"

The concept of hyperautomation was first applied in tandem with Robotic Process Automation (RPA), which handled predictable rote tasks. Since then, Artificial Intelligence (AI) and Machine Learning (ML) have been introduced to handle more complex assignments. Our experience centers on the use of this technology.



We see
"sweet spots"
of opportunity
in three areas



Predicting
behavior



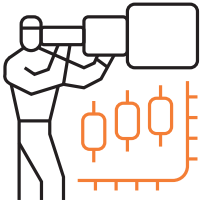
Elevating the
role of operations
employees



Enhancing
the customer
experience

Predicting Behavior

1



Predictive modeling is not new in mortgage lending. Wall Street firms have used predictive models for default and prepayment for the past 30 years. What is new is that AI and ML have advanced the art and are making inroads into mortgage operations.

In 2020, when Congress passed the CARES act, approximately four million homeowners, representing 8% of the mortgage stocks, applied for forbearance. A large mortgage servicing client asked us to forecast the percentage of consumers who would emerge from forbearance so they could predict defaults. In this case, we looked at ML-based prediction techniques that focused on historical behavior, credit standing and other external factors. This enabled the lender to provide outreach and training in handling customer inquiries.

We clearly envision AI and ML being useful as a risk management and opportunity evaluation tool, particularly in a rapidly changing market environment. The use of modeling to predict propensity to refinance shows exceptional promise as a business development / portfolio defense tool.

Enhancing the Customer Experience

2



While some lenders have made tremendous strides in automating the loan application process, for most consumers, applying for a loan involves an intricate back-and-forth conversation, with originators requesting documentation and bits of information--sometimes repeatedly. AI can take the wrinkles out of the process by keeping borrowers engaged through the application journey, guide actions and responses for consumer outreach based on behavior and intent and consolidating communication through one channel and with one voice. The objective in hyperautomating loan applications is to deliver a cohesive experience that will engender "stickiness" while reducing loan decisioning time.

In one such case we worked with a large non-bank, full-service mortgage company that originated loans through retail, wholesale, and correspondent channels in 50 states, the District of Columbia, Puerto Rico and the Virgin Islands. They were relying on a loan origination process that was very convoluted, involving data from multiple sources and ingesting it into their LOS. Loan setup was taking too long, employees were having to weave together data from multiple documents and systems, and loan status was not clear.

We created a unified solution balancing an ML-based Document Understanding Framework, RPA, and human intervention in an orchestrated effort. The result was a hyperautomated process that orchestrated end to end the loan's journey, from classifying and indexing documents to loan posing in the system of record.

The value of this approach lies in incorporating AI-assisted automation in the center of the process, providing real-time loan status to loan processors.

The magic sauce was that we began with a "start small" pilot and scaled the solution over 12 weeks. We used ML-based desktop underwriting to train the application using forms-based, Regular Expression-based and external model-based techniques to address document variations across structured and unstructured data. This technology also has the ability to learn and improve over time.

3

Advancing Automation in Loan Operations



Efficiency has been a mortgage industry buzzword since the nineties. Reduce the labor component associated with origination and servicing, and you will pad the bottom line.

Origination has been the beneficiary of technology investment, but loan operations and servicing are poised to make up for lost ground. Behind the otherwise tranquil look of a smart LOS often lurks a calamitous back office, full of sticky notes, Excel files, paper and manuals. In this space, AI-augmented bots are beginning to play a pivotal role in streamlining and automating processes, leaving humans to focus on exceptions while technology processes mundane tasks.

AI-augmented bots can eliminate the mundane, rote activities that sap the spirit of employees and lead to errors of omission. They are ideal for executing and validating business rules and comparing data across multiple systems and platforms-the kind of activity that will make an otherwise competent employee's eye glaze over.

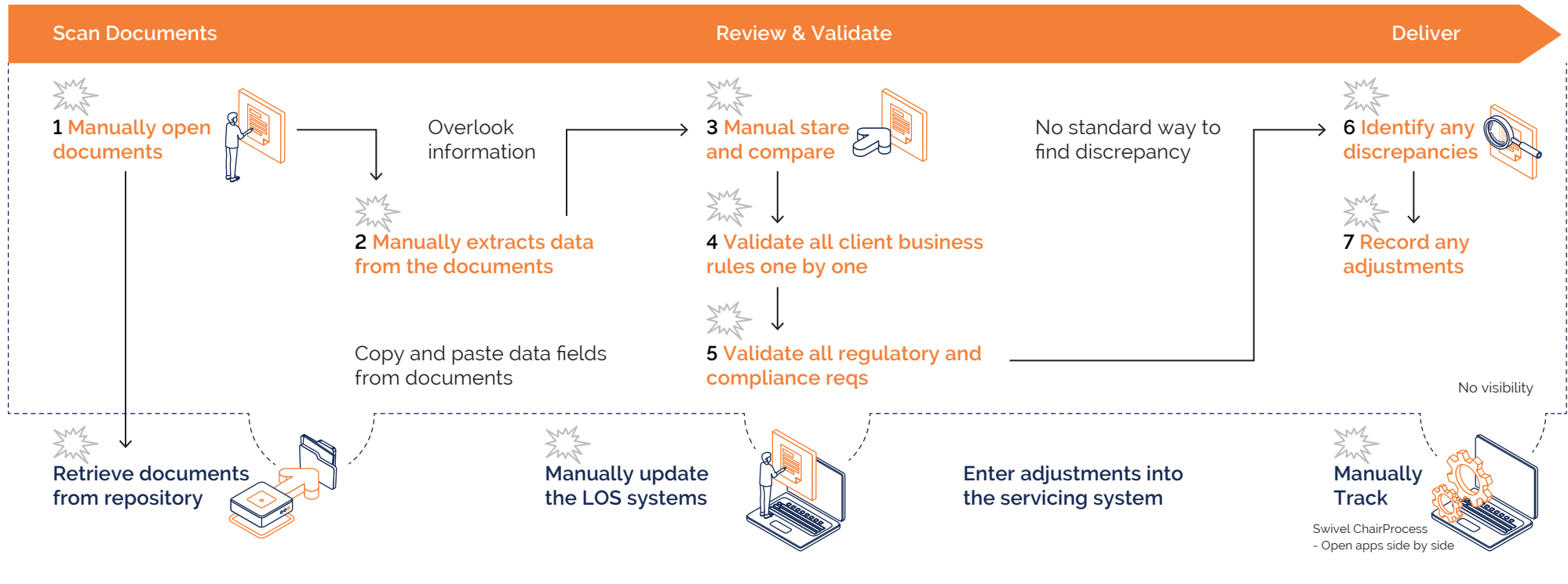
In the business case cited above, we also achieved the following operations enhancements:

- We transitioned from a "pure human" model to one that employed human and digital labor, lowering operations cost.
- The client noted a huge uptick in productivity from automating rote activities. This translated to a better pull-through rate and a faster close.
- The lender was also able to respond to market demand by commissioning new digital workers, rather than spending time and money on recruiting, training and managing human labor.

You want to rev up your employee base? Empower them with hyperautomation.

Bottlenecks occur when systems and handoffs are disconnected

Friction Points



200 # of documents in a mortgage loan package

4 hrs processing time for processing each mortgage package

4x # of times documents are reviewed/processed across loan value chain

What is in the way?



It is said that at every crossroads on the path to the future stand a thousand men guarding the past. Mortgage lending is behind the automation curve not because we all work within an inflexible system; it is because we choose to work that way.

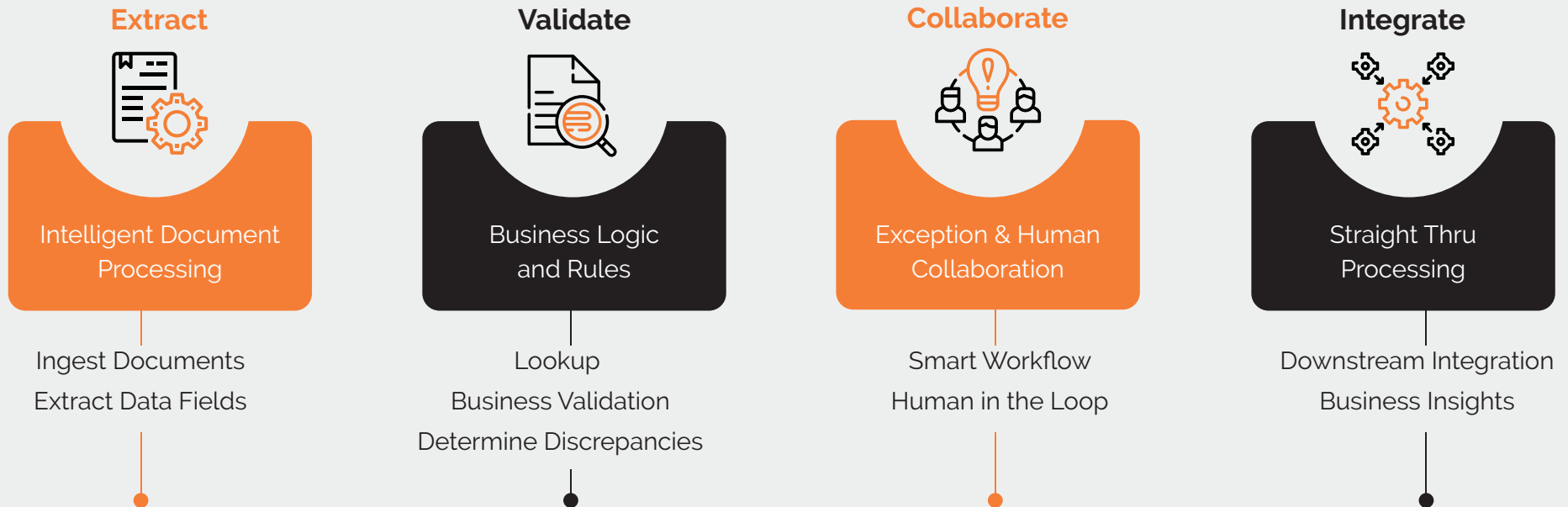
Face it: change is hard. People tend to remain mired in the status quo because it is familiar. Automation can be frightening, particularly if it eliminates tasks and management fails to fill the void with more meaningful assignments. Inertia in technology adoption—even in organizations that embrace change—can serve as a sea anchor to progress.

Automation has a strong human factors component that requires a cultural change. Engaging your team in advance of introducing new technology, explaining what is driving the change and how their roles will evolve will contribute to success. You may have the courage to advance, but you also have to instill that sentiment in your team.

Overcoming the **silos** mentality

Some lenders believe they can automate individual components of origination or servicing one at a time. While such an approach may be effective if executed in the context of a grand vision of reinventing the enterprise, too often it leads to a fragmented, siloed array of technology components that do not integrate well.

These efforts cry out for orchestration, like what can be accomplished using UiPath AI Center, which networks technology components and employees to create a seamless processing path. Similarly, an Engagement and Orchestration engine can leverage data across silos to focus on consumers and enlighten them on their journey.



Crossing the statistical divide

Hyperautomation that engages in prediction is often perceived as black box technology. It is never 100% accurate; however, because the approach is unbiased, its predictive power can be expressed as the area under a normal curve. That is, predictive models soundly constructed and using reliable data cannot be influenced by human bias. There is a tendency sometimes for employees to mistrust predictive modeling, in the same way that automobile drivers try to outthink navigation apps that crowd-source traffic patterns. More often than not the application wins.

This, too, is a cultural bias that must be overcome for hyperautomation to hold currency.

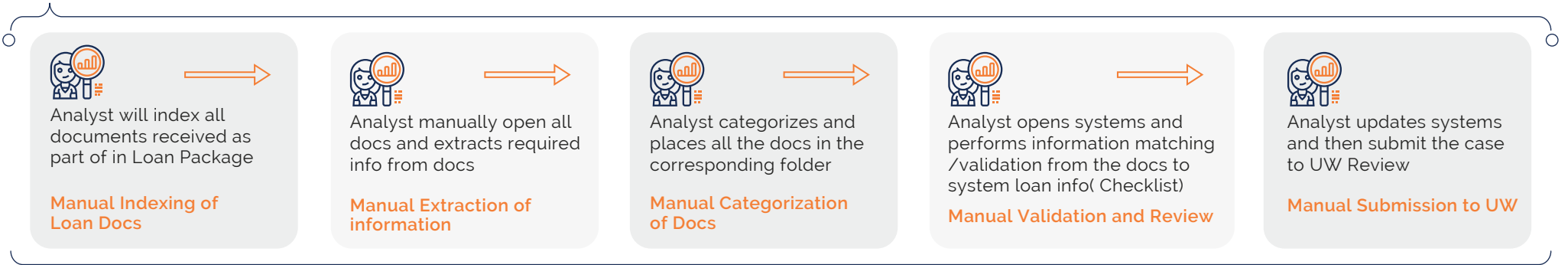
Bots and Humans Play Well Together

This diagram illustrates the success we have achieved joining “brain work” with “hand work” using the UiPath AI Center, which provides for human review of bots created in the process. The Engagement and Orchestration engine leverages siloed data to guide and enhance the customer experience. The overall success rate is a function of taking a holistic view of automation across the mortgage life cycle. The result is a significantly enhanced customer journey.

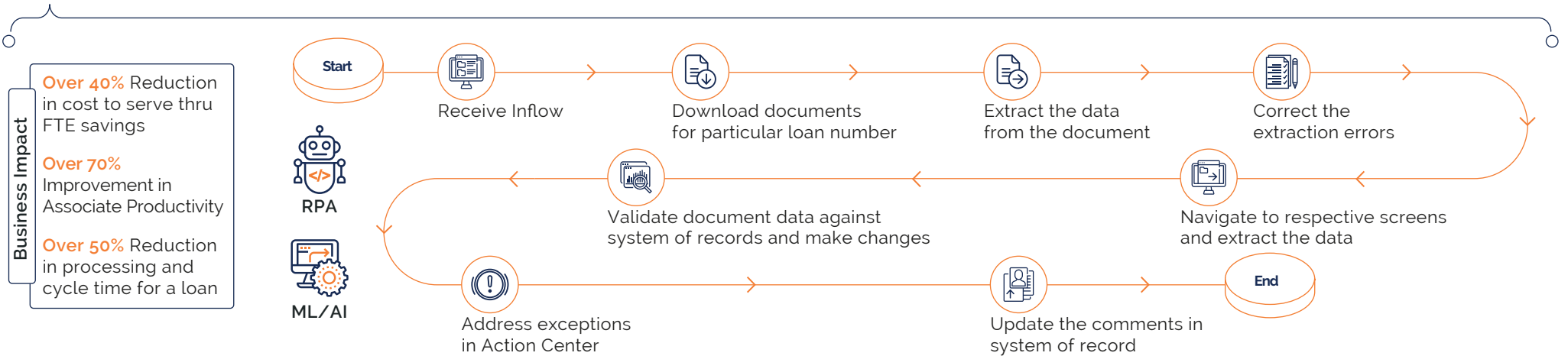


Simplifying the customer journey for a Mortgage Firm

Before



After



What have we learned?

We are often asked, what approach yields the best outcome when it comes to modernizing processes through hyperautomation using AI/ML? We focus our attention on two things:

1) Set goals. It is said that if you don't know where you are going, any road will take you there. Goal setting authenticates the technology plan and lends credibility to the initiative.

The objective in goal setting is not to nail the prediction; rather, it is to draw a line in the sand and become better at predicting and anticipating performance gains. Achieving a 100% success rate in any process using ML is highly improbable; maybe a success rate of 70% is more realistic and beneficial from the standpoint of demonstrating technology's contribution.

We tend to be specific when it comes to Key Performance Indicators, which we establish at a fairly granular level. Following are examples of KPIs developed for component processes of an overall hyperautomation strategy:

Metric	Definition	Target %
Classification Pass	Calculated by dividing the number of pass through pages by the total pages	85%
Classification Accuracy	Calculated by dividing the number of correctly classified pass through pages by the total pass through pages	99.5%
Data Extraction Pass Through	Calculated by dividing the number of pass through fields by the total fields	80%
Data Extraction Accuracy	Calculated by dividing the number of correctly extracted pass through fields by the total pass through fields	98.5%
Straight-Through Processing Rate	Percentage of documents where all the data fields were auto extracted accurately without human intervention	70%

2) Treat hyperautomation as a journey, not a destination. We like to tell our clients that adopting new technology is crossing the starting line. We advocate a model that we call Master/Checker, which integrates Bot Makers with human-in-the-loop checkers. In this approach, ML and AI create bots that automate tasks, while humans check the outcomes. We expect this tandem of man and machine will yield quality levels that exceed our baseline.

In hyperautomation, the accuracy of the solution increases with human involvement, as knowledge gained from processing exceptions is passed back to technology for assimilation and learning.

In addition, we advise our clients to plan for consumption, integration and deployment of ML models on day one of deployment. In other words, no fence straddling. Learning models struggle to perform and produce business value if they are under-employed. Too, employees will be confused about your conviction in the new approach.

We also advocate building a governance safety net through ML ops when it comes to hyperautomation in mortgage lending operations. Your governance firewall should monitor model safety, compliance with respect to access controls, and should generate audit paper trails.

Ensure that the data upon which you train your ML models is similar to the data in your production pipeline. This will add to the integrity and relevance of the model's decision-making model.

And refine your ML models as the business context changes, or your target performance changes.

Final Word

Automation is not an opportunity—it is a mandate. Choose your technology provider wisely, for it is not always about deploying the best and newest technology, but the one that achieves the best balance between automated and human decision-making.



Providing customer-centric transformation solutions across the mortgage value chain

Buying a home is one of life's biggest financial and personal decisions, and it can also be one of the most stressful. At Sourcepoint, we simplify the home financing experience by removing its most challenging aspects so borrowers can focus on what matters most – making a house, home. For our clients, this means increased customer satisfaction and more agile operations – all delivered through the right mix of technology and human touch.

As a leading provider of expertly crafted products and services to the US mortgage industry, Sourcepoint has been helping leading mortgage companies sharpen their competitive edge for over 25 years. Our global workforce tailors right-shore business processes, delivering them through a comprehensive array of state licenses, creating value across the mortgage lifecycle

www.sourcepointmortgage.com

