



HYPER-AUTOMATING MORTGAGES

MORTGAGES PROCESSING FOR
BANKS, LAW & REAL ESTATE FIRMS

DOCUMENT CLASSIFICATION AND
EXTRACTION

LEADING BANK
OMNITIVE MIDP SOLUTION

Executive Summary

CHALLENGE

Automation of mortgage processing to support the financing of property purchases in Spain involves manually classifying and extracting data from dossiers, containing various types of complex legal, tax and real estate documents. Annually, 2,4 million applications are evaluated containing 16 documents each. On aggregate, 39 million documents are classified and some 300 mill. datapoints extracted. Currently, such operation involves 4,461 FTES providing specialized technical legal knowledge, following a maker-checker dynamic, and costing the industry an estimated €156 Mill. The status quo is expensive and slow, limiting evaluation speed, as well as the the ability to expand revenue and grow profit margins.

SOLUTION

We deployed Omnitive MIDP to classify documents, read and extract datapoints from mortgage applications – including payroll, invoices, notary deeds, various tax relevant documents (036, 130, 131, IRPF) as well as Land registry excerpts, among others –.

RESULTS

Our solution reduced the time required to process mortgage applications by 93.55%, effectively from hours to 6 minutes. It features 95% classification accuracy and 90% data extraction accuracy. Mortgage evaluation cost was reduced by 82.85% equivalent to 5.8 times. Issuers saw a boost in their processing speed, enabling them to achieve faster turn arounds and better customer service leading to revenue and profitability growth.

The Client

COMMITTED TO EVALUATING MORTGAGE APPLICATIONS FASTER & BETTER

Customer is a leading retail bank with significant presence in the Spanish market through a well recognized brand and market offering. It works across the various customer segments, with strong focus on retail lending, and particularly mortgages and consumer loans.

Currently, customer evaluates 243,000 mortgage applications yearly, totaling €9 Bill in awarded loan value.

Customer has always taken pride on moving early and being able to profit from the latest technological advancements, investing heavily in automation. It features a modern back-bone document workflow platform enabling to easily plug-in via APIs novel solutions.

THE NEXT STEP WAS TO EMBRACE HYPER-AUTOMATION

Customer had a clear goal to continue being a modern digital bank, offering superior mortgage lending services. They conceptualized this goal as the continuous improvement of existing systems to better serve customers. To do so, they were eager to adopt not just advanced technologies, but best-in-class hyper-automation solutions.



Transforming the front



Transforming the back



Evolving IT architecture and systems



Onboarding new technologies



Becoming an agile AI-driven organization

The Challenge

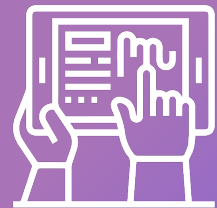
HYPER-AUTOMATION BECOMING INDISPENSABLE FOR SUSTAINABLE GROWTH

Since the start of customer's digital transformation, automation was top of the agenda. With ambitions to significantly increase the number and value of processed and granted mortgage applications, customer's growth and profitability heavily relied on successfully adopting and deploying superior technology. A hyper-automation solution able to automate the evaluation of mortgage applications was the natural next steps on the journey.

Depending on the nature of the property and legal nature of the acquiring party, mortgage assessment involve processing different types of documents, such as payroll, labor life, tax (036, 130, 131, IRPF), land registry excerpts - inclusive of leans and charges -, valuation, invoices, DNI / INE, etc. These would normally be reviewed by a team of legal professionals to properly classify them, extract, and contrast key data points to evaluate mortgage applications. A single mortgage application would therefore normally take several hours to evaluate.



€9 Bill mortgage value



Current process:
€ 16 Mill
&
900,000 hours



HYPER-AUTOMATION CREATES KEY DIFFERENTIATION AND EFFICIENCIES

As a result, the customer was looking for an innovative digital solution that would help realize improved performance and efficiencies while minimizing costs and errors. Specifically, that meant classifying 100,000 documents, extracting 117 Mill datapoints. Specialized and costly human talent, commanding deep legal, real estate, tax and financial knowledge, handled the process end to end ensuring accuracy and compliance.

On aggregate, customer looked at 900,000 hours of labor, equivalent to almost € 16 Mill in cost.

There was no choice, customer had to exponentially improve operational efficiency and fully embrace hyper-automation.



61,000 dossiers
100,000 documents
117 Mill datapoints

The Market Opportunity

HYPER AUTOMATION DRIVING GROWTH



Yearly hours of labor:
8.9 Mill.



Associated staff
head count:
4,461



FTE cost:
€156 Mill

In 2022, industry players evaluated some 2.4 Mill mortgage applications. 608,656¹ were successful totaling an aggregate value of €91.2 Bill. Each application comprises 16 documents on average, and minimally 2 FTEs were involved in the evaluation process.

At first documents need to be manually sorted, and up to 481 datapoints, manually extracted. The later are used to manually populate evaluation tools that would finally decide on the suitability of the application.

To manually evaluate 2.5. Mill. applications annually, 39 Mill. million documents need to be classified and some 293 Mill. datapoints extracted, across 105 Mill pages. These are not small numbers, and substantial manpower is employed to complete these tasks.

“HYPER-AUTOMATION TRANSFORMS HOW WE USE TECHNOLOGY MAKING ORGANIZATIONS MORE AGILE”

Currently, the mortgage processing practice in Spain employees 4,461 staff across banks, law and real estate firms. 1,017 or 33% of the total headcount works exclusively on redundancy checks, to guarantee correctness of outcomes in a 4-eye process.

Considering that a clerk, on average, can process 60 dossiers monthly to evaluate the corresponding applications, and assuming a fully loaded FTE cost of €35k, the industry is spending around €156 Mill yearly on staff costs alone.

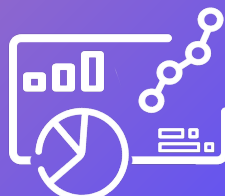
Customer was ready to fully embrace hyper-automation with very clear goals: improving efficiency, processing more mortgage applications faster, boosting top lines, and increasing profitability. In a nutshell, achieving exponential growth.



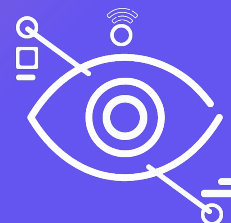
Yearly mortgage
value:
EUR 91.2 Bill



Mortgage
dossiers:
2.5 million / year



Documents:
39 million / year



Datapoints:
293 million / year

The Process

A COLLABORATIVE PROCESS FROM START TO FINISH

The project begins with a collaboration to discover a detailed problem statement and opportunities for AI-driven hype-automation. The scope of the deployment is then carefully planned with contractually guaranteed outcomes. Various iterations of training using customers’ data corpus and algorithmic AI constructions are built into Omnitive MIDP. Once ready, the system is deployed to extract real and usable data, which is continually evaluated together with qualitative feedback to develop the best possible system.



Discovery



Scoping



Training



Development



Output



Evaluation



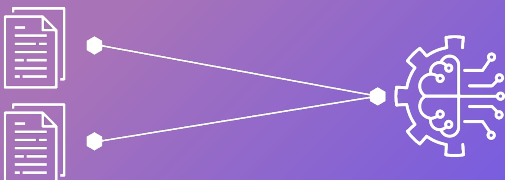
The Solution

100% AUTOMATION OF MORTGAGE EVALUATION

Customer had planned a sound workflow to automate 100% of the evaluation of mortgages. Omnitive MIDP was the cornerstone of this project. Omnitive MIDP starts by cleansing, de-skewing and automating the classification of all documents in each mortgage application. Next, MIDP completes the extraction of key datapoints ensuring correctness. Once validated, - maker-checker approach -, the extracted data is stored and fed to the actual evaluation solution through APIs. At any time, areas of potential risk were to be highlighted and flagged to customer’s team to perform compliance checks. Once all these checks are in order, the application is ready to be evaluated according to customer’s specific metrics.

DOCUMENT TYPES

- Work life
- Payroll
- Tax (IRPF, 036, 130, 131)
- Land registry excerpts, incl. liens
- Pensions
- Invoices and proofs
- DNI / INE
- Valuation
- Binding offer
- Etc.



KEY FEATURES



DOMAIN-SPECIALISED KNOWLEDGE

ORKID worked with the customer’s subject matter experts to nail domain-specific knowledge (i.e., legal, financial, and regulatory concepts) so that the system could interpret and comprehend complex linguistic structures in various formats consistently.



FLEXIBILITY IN LANGUAGES

ORKID was able to ensure that the system would handle complex cognitive tasks in a foreign language, Spanish, with unparalleled accuracy.

THE INTELLIGENT BUILDING BLOCKS OF OMNITIVE MIDP

ORKID’s approach to document classification and data extraction brings in multiple intelligent tools for maximum accuracy and reliability, yet with a user-friendly focus. For customer, deployment was further conducted in stages. This gave the company greater control over the development process and allowed ORKID to perfectly tailor the solution to their requirements, down to the smallest detail.



CONVERSION AND CLEANING

De-skewers and noise removers improve image quality. Optical Character Recognition (OCR) then converts free-form text characters into machine-encoded text.



DOCUMENT CLASSIFICATION

Documents are sorted into pre-defined categories.



INTELLIGENT EXTRACTION

MIDP understand and interprets text contextualizing like a human, only faster, extracting the required key pieces of information.



VALIDATION

Extracted information is normalized and validated to ensure the highest levels of accuracy and compliance.



The Results

UNLOCKED SHORTCUTS IN PRODUCTIVITY AND INCREASED REVENUE

Omnitive MIDP transformed the previously expensive manual process into a leading-edge automated solution. Total processing time for the evaluation of mortgage applications was cut by 93.6%, to just 6 minutes. Total operating costs were effectively reduced by 83%, or 6 times. These metrics were delivered alongside a 95% accuracy rate in classification and 90% in extraction. By customer request, and as it is customary in complex automations, the outcome produced was revised by a checker. Consequently, the customer’s ability to evaluate mortgage applications was boosted, improving top lines, and increase profitability.



Overall classification and extraction accuracies of mortgage portfolio documents were at an outstanding 95% and 90% respectively.

93.6%
Reduction in
processing
time

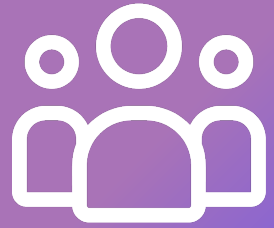
95%
Classification
& 90%
Extraction
accuracy

5.8X
Total cost
reduction

HARNESSED THE INTELLIGENCE OF A HUMAN EXPERT IN LOAN DOCUMENT HANDLING

The automation of mortgage applications posed a highly complex and stake bearing cognitive task. Omnitive MIDP was able to understand highly complex legal, financial, and regulatory concepts, automating the classification and extraction of documents.

The solution's accuracy marked a significant improvement from the prior highly inconsistent and error-prone manual process. Mortgage applications involved a complex 4-eye manual process. They often had to be reviewed multiple times imposing delays on the evaluation timeline. Omnitive MIDP created a more compliance friendly workflow, including an alert system to immediately identify errors.



€156 million staff cost spent annually on lawyers and paralegals to manually read, classify and extract information, and evaluate applications.



MARKET PIONEER: 1st AUTOMATED MORTGAGE EVALUATION SOLUTION

Working with ORKID, customer implemented a 100% digital mortgage evaluation solution end to end. Omnitive MIDP cloud deployment, seamlessly integrated with customer's back-end workflow and core business model. Processing at lightning speed and impressive accuracy, customers could receive confirmation and feedback within hours, thereby elevating the customer experience. Able to evaluate more mortgage applications faster, customer was able to reach perfect alignment with their long-term growth objectives and improve competitiveness.



VALUE PROPOSITION: PUSHING THE LIMITS OF SCALABILITY

ORKID's Generative AI-powered hyper-automation solution pushed the boundaries of traditional automation in complex tasks requiring experience, skill, and training. It effectively integrated the necessary legal, financial, real estate and financial domain knowledge.



More importantly, the extreme accuracy generated stability and predictability in an otherwise fallible manual process. This intelligent solution helped advance innovation, delivering substantial savings in specialized staff work hours and overhead costs, while also enhancing productivity. It impressively reduced the time required to evaluate a mortgage to just 6 minutes, involving a final checker run, and the associated costs by 5.8 times, which helped push the top line and profitability alike.

What's Next

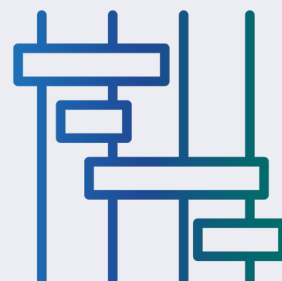
CONTINUOUS ENHANCEMENT COMMITMENT

ORKID and customer continue to collaborate closely in a long-term partnership. The collaboration entails close analyses of performance metrics and continuous algorithmic refinements to achieve ever-improving results.

NEW DIGITAL MILESTONES

ORKID and customer are planning to subsequently deploy projects in other parts of the business and geographic locations to leverage the full potential of hyper-automation.

Customer also has strong visions to digitally expedite its services further in new divisions and applications. Finally, both firms are committed to transforming the industry and are cooperatively selling the solution built to other industry players.





ORKID

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ADDRESS

1 Scotts Road
#21-08 Shaw Centre
Singapore 228208

WEBSITE

www.orkid.io

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