

# THE SPIRIT OF INNOVATION

*FUNDS EUROPE* TALKS TO AMUNDI ABOUT ITS COMMITMENT TO CONTINUOUS INNOVATION AND ITS LATEST WORK WITH MACHINE LEARNING AND COLLABORATIVE TOOLS.

## LEADING EUROPEAN ASSET MANAGER<sup>1</sup>

Amundi prides itself on its record for operational innovation. Research and development has been at the centre of its growth, with a particular focus on technology and services. For 15 years it has internally developed its own Portfolio Management System – Amundi Leading Technology & Operations (ALTO). This platform and the Amundi organisation are now fully integrated and constantly updated to adapt to new clients, asset classes, investment strategies and geographic markets.

“The idea behind the platform is that all data, screens and processes are shared by different teams, from front-to-back to support teams (portfolio managers, risk analysts, middle-office, referential and reporting teams)” says Matthieu Dartiguenave, Senior Project Manager at Amundi.

In 2016, Amundi decided to launch a new strategic business line, Amundi Services, to offer solutions and services to external asset managers and institutional investors for dealing, fund hosting and portfolio management. In the last year, Amundi has developed tools using new technology, one involving machine learning and bots to carry out commoditised tasks and another project to develop a collaborative tool based on crowdsourcing.

For the machine learning, Amundi has started with activities where there is a low level of automation, a lot of recurrent activities and the possibility of easily catching interesting data. “We started with a client servicing issue because there was a lot of client queries that were



answered using email,” says Matthieu Keip, Chief of Datascience at Amundi. “The first bot that we built was quite simple. A study of the past activities has revealed four main categories of client questions, so we have built a bot able to detect these categories and forward the client question to the right Amundi expert. With a few volumes of data, we were able to train our model with 90% success. Now, we have reused this technique for many other activities.”

The next area of focus was creating a document management bot to deal with the many counterparties that communicate only by mail or pdf with unstructured data and no standard document format. “The bot is designed to scan each document, determine the document type (factsheet prospectus, subscription, ramp up, performance report and so on) and extract the relevant information to feed the Asset Manager Database. This project showed

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us how to create a hybrid system, where the machine carries out a pre-work (detection, extraction...) and leaves the final analysis to the hand of the expert” says Keip.

The middle office is also a good playing field for these technology efforts due to the sheer volume of portfolios and the multiple locations. One of the most time-consuming tasks for the middle office is to reconcile the security positions, included repo agreements or securities lending arrangements, on a daily basis in accordance with those also produced by

<sup>1</sup> (1) Source IPE “Top 400 asset managers” published in June 2018 and based on AUM as of end December 2017.

independent third parties such as fund administrators and accountants. For any over-the-counter instruments, the reconciliation rate can be as low as 60% and is a heavily manual process requiring substantial manpower.

Given that Amundi increases its activities and Amundi Services opens its platform to external clients, the volume of transaction is likely to increase significantly creating a greater need for scalability. This is where Dartiguenave believes machine learning can make a key difference. "The matching process is primarily based on rules, as are algorithms and machine learning," he says. "We have to come up with new rules as our portfolios grow and as the market changes, and it can be difficult to keep up. So we wanted to use machine learning so that the platform can come up with its own rules and create a more efficient matching process."

Amundi understands and tests its models via a newly developed validation framework, says Keip. "We have been conservative to the extent that we are prioritising the quality of matches rather than the quantity. We would prefer a lower matching rate with 100% certainty than more matches but with errors. We want to avoid generating false positives. In that way, we succeed to develop our predictive model and it overlaps 95% of the matching rule. The model also produces new rules, given only by the reading of our data, we are proud of that."

The technology is not there to replace anyone in the middle office, says Dartiguenave, but to free them up to devote more of their time to higher-value tasks such as focusing on client queries or regulatory engagement rather than processing matches and validating thousands of NAVs, line by line – tasks that currently take up more than 40% of all processing time. "The middle office will have a minor change of role but a big improvement in technique. Our goal

is to help every internal and external investment team to build and run their own models on our platform."

### Anomalies

Amundi's second major technology project is the development of a collaborative tool to deal with data anomalies. "We are consuming more and more data and sharing it between different departments and entities," says Dartiguenave. "For example, we now have ESG ratings as well as conventional credit ratings to consider when valuing portfolios. We are using the same data in different places but the data is not always perfect so we have to ensure that we know its origins and can get the same consistent results by guaranteeing the integrity as well as the scalability of the data."

Amundi has developed a tool that uses elements of crowdsourcing to make the supporting and contextual information behind the data available to all relevant users. And should any user find a potential problem with the data, it can be flagged to all users via the tool. It will appear as an icon on the platform that when clicked will give a description of the problem, the escalation level, the timeline for a resolution and a chat facility to address the issue in real-time. "It is about enabling people to find issues, monitor them and ultimately solve them," says Dartiguenave. "This tool can bring different parties together and help data exceptions, anomalies to be resolved much more quickly and avoid duplicate actions between experts."

The tool has been fully implemented and deployed in the middle office and the testing has proved successful to date. Furthermore, Amundi has also been able to collect data on the anomalies that have arisen. This data can then be fed into the platform and analysed using machine learning to ensure that users can be more proactive than reactive and ensure that any data problems are found before they

are sent to clients, after which resolution can be a much more costly process.

These kind of projects are indicative of the type of innovation that the funds industry needs to explore more especially with programming capabilities for portfolio managers says Keip. "If you compare the funds industry to the likes of Amazon and Google, it is not that

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pioneering, but at Amundi, we pride ourselves on our continuous innovation and our ability to share it with external asset managers via Amundi Services. Lately every manager has talked about innovation, but we've been doing it since the beginning. For us, innovation is not just about new projects, it is also a mindset created by our process and organisation.

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