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Post-trade solutions for a post-pandemic world

How SmartStream is revolutionising banking through data

The world has changed in many ways since the start of the pandemic. Back then, the big question hanging in the air was how banks and businesses would respond to a zero-interest rate environment. Now, we are looking at the prospect of a recession with both inflation and interest rates rising at rates not seen in decades.

The war in Ukraine has brought further challenges, including the freezing of Russian assets. Additionally, banks are adjusting to the continuous waves of new regulations governing payments, all while settlement times are contracting and expectations from customers are for execution times to be reduced from days to hours and minutes.

This is happening while competition among the big banks continues to increase and new competition from challenger banks and fintechs has arisen. Data is the new currency and data management solutions are the new weapons.

All parties, from Tier 1 banks to the more agile fintechs, need access to high-quality data and lightning-fast reconciliation systems and streamlined exceptions management solutions.

Every single one of these challenges is firmly on the radar for SmartStream Technologies. SmartStream offers purpose-built solutions specifically designed for the challenges businesses are now facing as well as those they will face in the future.

Whether its their AI-enabled data reconciliation module SmartStream Air, the new Lightning product that automatically generates matching rules to speed the onboarding of data sources, the newly launched exceptions management system or the company's cash and liquidity management platform that helps banks maximise revenues in a world of rising interest rates. They have listened to what their customers asked for and delivered.

In an ever-changing world, innovation must be constant, and innovation is in SmartStream's DNA.

AI and ML spell innovation

Artificial intelligence and machine learning have become much more than simple buzzwords for financial services. Rather, they have become integral to the way banks analyse data and derive value from it. Jethro MacDonald, product manager for AI and machine learning at **SmartStream**, tells Jim Banks how the application of AI and ML continue to increase the functionality of key post-trade solutions.

Since the foundation of SmartStream's Innovation Lab in 2016, artificial intelligence (AI) and machine learning (ML) have been at the heart of its efforts to develop more sophisticated functionality for the company's solutions. The lab exists to proactively investigate and evaluate emerging and disruptive technologies – and both AI and ML are central to that mission.

Jethro MacDonald, product manager for AI and ML at the Innovation Lab, oversees the application of both technologies across SmartStream's product portfolio and is continuously investigating how they can be applied to both current challenges and core issues that will emerge in the years ahead. That work has led to major steps forward in the company's current offerings to its clients.

"There are three main areas that we are looking at," MacDonald explains. "The first is the onboarding process for our reconciliation solutions to speed up that process. Previously, that process was manual and time-consuming, but we have developed Lightning to correlate data from different data sets, define how they should be linked and how we can identify matching rules."

Lightning strikes

Lightning is the latest adaptation of SmartStream Air, the company's flagship reconciliation platform, which grabbed the attention of the banking industry because of the sheer speed at which it can match data sets of all kinds – both structured and unstructured.

SmartStream Air raised the bar on the reconciliation process, enabling banks to match data sets in seconds rather than days or weeks. Yet, the process of creating sets of rules for matching data remained a sticking point, requiring both time and manual effort, as well as foresight and experience, to anticipate where problems might arise. AI helps Lightning circumvent that process.

"Lightning goes through all the data, links it together and creates the match rules automatically in a very controlled manner," says MacDonald. "People worry

about AI being in a black box, so we show at each step why we think the data should be linked together in a certain way. Clients can keep or change those rules.

"Lightning compresses the time and effort needed to create rules and controls," he continues. "That is important because our clients want to build controls much quicker. This is a logical solution for AI, and it is actively used by many of our clients."

MacDonald is in charge of SmartStream Air and of innovation processes at SmartStream more broadly, and a key focus of his work is the integration of AIR into all of the company's core systems – benefitting both new clients and customers that are signed up to its existing solutions. A key development of AIR is the incorporation of Affinity, which tackles the second of MacDonald's core challenges.

"That is the minimisation of the manual work involved with data matching," he explains. "Once the reconciliation system is built and the onboarding is done, then the effort for manual matching needs to be reduced. Affinity is a learning AI. It learns from a user's behaviour, proposes suggested matches for unmatched data based on what the user has previously done.

"Once again, everything is shown to the user who sees the substrings that go together and why. The user can confirm those matches and the solution gives a level of security, transparency and visibility. This is not just AI in a black box."

Over the past two years, the turnover of staff in the industry has been high, not least because of the effects of the Covid-19 pandemic. And when key people leave an organisation, they often take their knowledge with them. By learning from user behaviour, Affinity retains that knowledge within the system itself. Ultimately, people can leave and the system retains their knowledge, and the training of new people is less time-consuming.

Taking exception to errors

Having accelerated the onboarding of data, dramatically boosted the speed of reconciliation and

found a way of incorporating key skills and knowledge into its matching engine, SmartStream then focused on another key area that consumes valuable time and money: exceptions management.

“Quick onboarding is great and reducing manual matching is great, but then you have to look at where users spend most of their time: exceptions,” says MacDonald. “There are many key questions here – what labels and priority do you give an exception, what teams handle it, why might it be categorised as high risk? We can automate all of that and assign it to the right team, assign a priority and categorise and initiate workflows. All of that is driven by AI.”

The functionality that MacDonald describes goes beyond the automation rules that all reconciliation systems already perform. The solution proposes attributes to new exceptions based on how users have applied exception attributes to previous exceptions that contain similar records. It essentially learns from past processes.

When showcased at Sibos in the second half of 2022, the solution generated extremely positive responses from potential users.

“Clients all want to be more efficient,” MacDonald says. “This is a more complex problem than we have solved in the past with AI, but the benefits are easy to understand. It is more complex because there are more moving parts involved and a more complex map you have to navigate.”

“Exceptions have so many different attributes and outcomes, so it is harder to work out the best possible process in a particular scenario,” MacDonald adds. “What labels should it be given? Who should handle it? The time to investigate and categorise exceptions can be long, as you need to drill down into each one, get on the phone and chase the money. There is a huge cost benefit for the client if that can be automated.”

Eyes on the horizon

The exceptions management solution is, so far, a unique proposition for clients in the financial services sector. SmartStream is the first to market with this technology and the company remains firmly focused on developing this solution further, working in close collaboration with its core clients.

“We are lucky to have such a huge client base, so we can see what their problems are and work with them,” MacDonald notes. “They are working with us on the exceptions management platform at the moment because our clients spend so much time working with exceptions. That knowledge is hard for them to replace, so they appreciate the ability to harness it and retain it with the system.”

“The next step is certainly to further the exceptions management technology with AI, plug it into the



overall workflow process and push the results into payment workflows,” he adds. “It is important for everything to be joined up, so we are looking across our systems to identify where a break in one system might have a knock-on effect downstream. Then we can work on how to flag that up and alert people to what the ultimate impact will be.”

At every stage, AI is the key driver, but MacDonald understands that it can’t work in the shadows. Visibility is essential and must go hand-in-hand with SmartStream’s goal of embedding its solutions further into client systems.

“We have a suite of post-trade solutions and we have a lot of data that we validate and reconcile, so if we can flag up problems early it gives our clients invaluable insights into what is going on with their processes,” he says. “But it is not about being monolithic. It is about helping to bridge the gaps and solve issues before they cause a big problem.”

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SmartStream’s Innovation Lab is always looking forward to the next challenge, trying to solve problems before clients are even aware of them. At the same time, it is firmly focused on bringing clients along on the journey. The company is working hard to bring its many solutions together, embedding microservices such as SmartStream Air into the broader product portfolio, but also giving clients visibility and control as AI and ML become more embedded.

“We are just scratching the surface of what can be done,” says MacDonald, arguing that clients can expect much more from the Innovation Lab in the near future. ●

Affinity absorbs the learning carried out by employees and feeds it back into the main system.