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How SmartStream draws wisdom from the noise of data

By Alex Pugh, reporter, FinTech Futures

Banks and other financial institutions (FIs) are handling vast and unprecedented quantities of data, and it's only set to increase.

These large datasets can expose financial institutions, particularly those that are reliant on legacy systems and manual processes, to heightened risk.

Artificial intelligence and machine learning (AI/ML) tools are essential if banks and FIs are to meet the challenges when it comes to data, particularly surrounding data reconciliation.

FinTech Futures spoke with Andreas Burner, chief innovation officer (CIO) at SmartStream Technologies, about how the firm's AI/ML tech can draw wisdom from the noise of data, plug the knowledge gap created by employee churn and how, in the Age of Machines, AI/ML can set humans free to handle valuable qualitative data tasks.

While many FIs have a fairly high ratio of automation within their existing legacy systems, which means they *can* process high volumes of data, sometimes the relevant information coming into these institutions is "not in perfect shape", Burner says.

Legacy rule-based systems struggle with massive amounts of knotty, messy data and therefore FIs need new ways to automate the "not so pretty data", otherwise these firms become too reliant on manual work. Nonetheless, automating

such unstructured data is particularly difficult.

"When we work with the Tier 1 institutions, we see this over-reliance on manual processes in their exception management departments," Burner says. "That's a big pain point in banks that we are currently targeting, and we are trying to make that process more efficient."

The Great Resignation

In the aftermath of the Covid-19 pandemic, many FIs are grappling with both an influx of real-time digital payment data and an exodus of staff – often taking their accrued wisdom with them.

However, there is wisdom to be mined from the data that FIs already possess. Because FIs have to store much of this data for many years for regulatory reasons, "when we look at that data, it contains information regarding workflows and how staff made decisions in certain scenarios", Burner says. This helps to offset the knowledge gap left when senior staff leave and a new cohort takes over.

If new staff can be guided by software, this can really assist FIs in the onboarding of new employees, helping to transfer that accrued wisdom.

FIs are also witnessing a massive influx of low-transaction value data thanks to the

ubiquity of digital, contactless payments. And it's a trend that banks and FIs think is only going to increase.

When SmartStream works with banks on projects in its Innovations Lab, "we always

hear that we should be ready to process even higher amounts of data than we already handle", Burner says.

FIs, at the coal face of this trend, know that thanks to players such as Apple Pay and Google Pay, the quantity of

transaction data that needs reconciling is only going to increase.

"People pay much lower transaction amounts digitally than they would have paid in the past, so you see a huge number of transactions, many with very low value, and that is quite difficult to reconcile," Burner explains.

Nonetheless, managing these transactions is still important because if a large number of these fail – despite their individually low values – in total, that is still a substantial risk for any bank. "So, while contactless is great for the customer, it can be a burden for their bank," Burner adds.

Age of Machines

Artificial intelligence and machine learning are certainly key to FIs if they are to handle the vast datasets that are now commonplace in finance. But in this Age of Machines, what role is there for humans when it comes to managing and capitalising on financial data?

"Exception management is the hardest thing to do in financial institutions because exceptions come in so many different flavours," Burner says. "That's why our latest technology, which we are announcing at Sibos, is AI for exception management."

Such exceptions could range from problems with

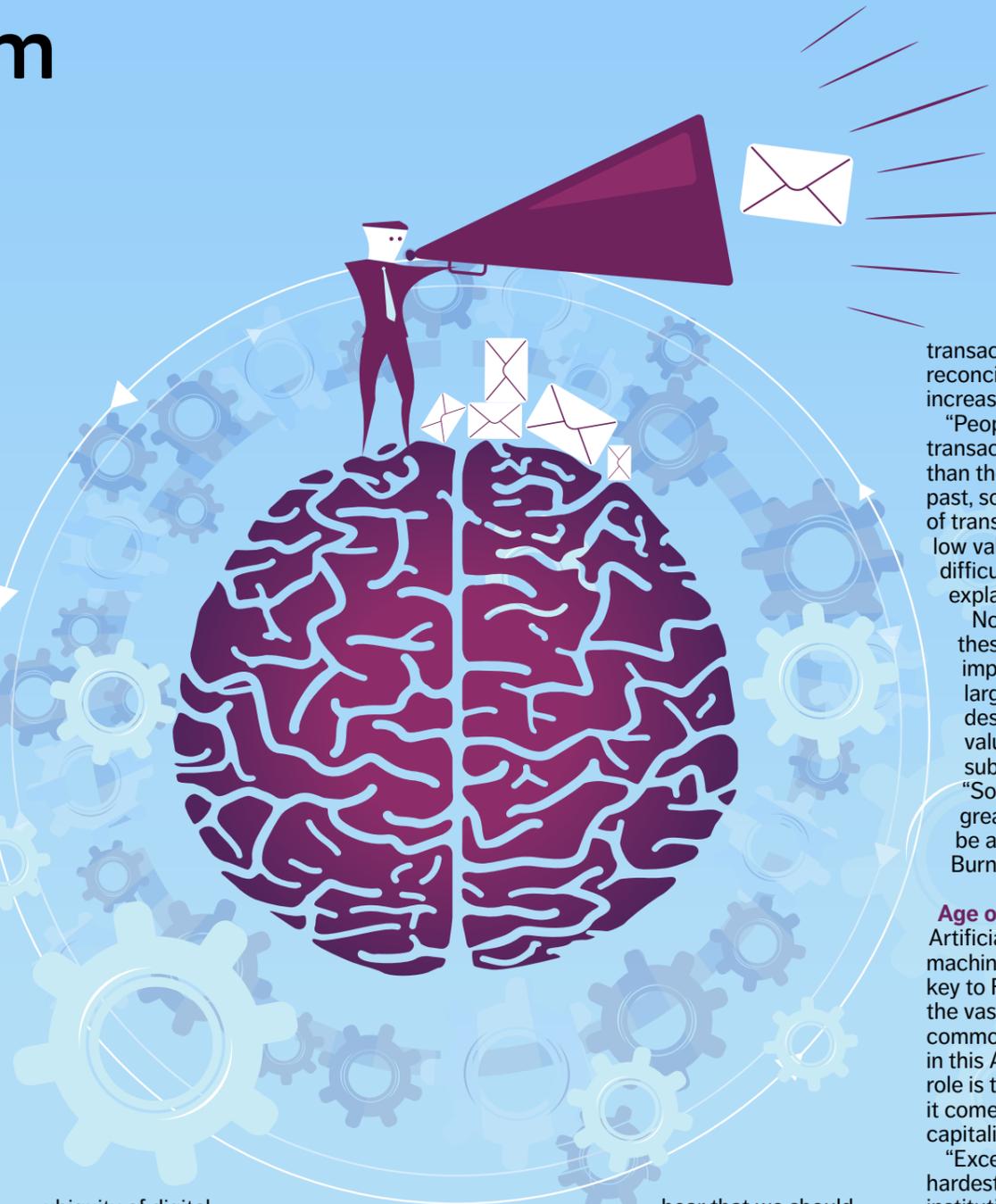
the data to problems with the network, all the way up to the vendor. With such a potentially diverse number of exceptions, management teams can be "huge", Burner says, "because every problem is so specific".

SmartStream is tackling these issues with its ML technologies that can learn many of these problems and attempt to automate them. Humans act as overseers in this process, freeing them up to "focus on the really hard problems".

The human element does not have to wrestle with quantitative data – the machines can handle that – but instead, people can turn their focus and attention to qualitative data problems, improving these processes "significantly", Burner adds.

While the focus at SmartStream is exception management, where reconciliations are but one of the sources from which exceptions arise, "when we started talking to exception management departments, we discovered that we solved a much bigger problem than just reconciliations," Burner says. "In the end, it's about enhancing the customer experience."

Exceptions often arise at a time when there may be a problem with a payment, or a payment was taken by a party the customer does not recognise, or their account was hacked. AI/ML technologies can





resolve these issues accurately and at speed.

“It makes a huge difference if the bank can solve that problem within half an hour, or a week.”

Cracking open the black box

While the benefits of AI/ML to banks and other FIs are numerous, many are still apprehensive about these fairly nascent technologies. This is particularly true when it comes to so-called black box technologies, whereby the applications spit out an answer or direction without revealing how it arrived at this particular conclusion.

Interestingly, SmartStream tackles this issue by explaining how these technologies arrived at their answer, creating transparency by adding a window into the black box.

“We might say, we are proposing that workflow to you because your data is in US dollars and there is a certain pattern in the data that will help clients,” Burner says.

And it’s just not revealing the ‘sums’ of the black box, but also presenting the data in a human-friendly way. To do this, SmartStream hired UI/UX teams to present the data in a way that is palatable and actionable to users.

“It’s not just about data, but how we show and present the data. We have huge amounts of information, but how do you present that information to the user in a helpful way?”

Thanks to that investment in UI/UX, SmartStream recently nabbed a Red Dot Award, which caters to the communication and user experience design industry.

“We invested so much in our application user interface design, to make the UI and AI seamless, so that users feel

“It’s not just about data, but how we show and present the data. We have huge amounts of information, but how do you present that information to the user in a helpful way?”

Andreas Burner, SmartStream

supported and can trust the system,” Burner says.

Context is also key here, with only the exact information that is needed for that workflow on display. “It’s highly contextual, we show information that we think would help the user, and nothing else.”

Boosterism

SmartStream has shown that when AI and ML are deployed in reconciliations, processing efficiency can be boosted by up to 20%. But there are other benefits, operational or otherwise, that a bank or FI can expect when they deploy these technologies.

“While we can automate 20%, we can also suggest to the user another 20% of workflows, and suggesting workflows to a user substantially increases efficiency as well,” Burner says.

While that efficiency cannot be measured as well as automation, “you can see that users get

higher quality data because the data has already been reduced before it is presented to them”. This arrangement, where humans and machines are working together, has a huge positive operational effect.

And the aforementioned employee churn can also be ameliorated, creating efficiencies through the relay of accrued staff knowledge during the onboarding process for new recruits.

Observational learning

The pace of innovation in this area continues. AI/ML technologies are getting smarter all the time. One new piece of kit at SmartStream is Affinity, which utilises observational learning to reduce the complexity of reconciliation.

Affinity is a component that can be deployed at a bank which works with the SmartStream application and observes user actions to understand on what basis decisions are made.

“It’s constantly checking for patterns and when it finds patterns, it will remember what it has learned,” Burner says.

Once activated, Affinity can get to work straight away, poring over the vast amounts of data that banks are required to store and learning from past actions. “So, there’s no ramp-up period,” Burner explains. “We can train it using data from the last seven months, even the last seven years.”

Affinity is fully integrated into SmartStream’s reconciliation solution, where it can automate workflows, suggest workflows or measure the quality of workflows.

“It is a very powerful component that we that we are deploying with our software products.”

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