

# Data rich but information poor Why it is critical for banks to deploy AI-enabled technology

WHITEPAPER |

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# Overview\_

Data volumes have grown hugely in recent years. According to Forbes, from 2010 to 2020 the amount of data created, captured, copied and consumed in the world increased from 1.2 trillion gigabytes to 59 trillion gigabytes. A 2020 Statista prediction indicated that data creation globally was likely to grow to more than 180 zettabytes by 2025. Yet, for all this abundance of data, the financial services industry remains surprisingly information poor.

Banks face the perfect storm. There is more data than ever, and it is more varied and moves about with increasing speed. Negotiating this volatile landscape is challenging and requires reliable, actionable

information. Deriving the required business insights from the unrelenting flow of data is an extremely difficult task, made even more so by the plethora of point systems and manual processes that obstruct firms from achieving a consistent, holistic picture of what is unfolding in and around them.

Rapid change is clearly needed if the industry is to unlock the riches of its data and turn what is currently a problem into an opportunity. The sector must abandon outmoded ways of operating and adopt innovative new technologies – such as artificial intelligence and machine learning – harnessing them to its advantage.



**ORX report**\_  
81 financial institutions

**€16.7bn**  
total gross loss

**€513bn**

gross loss in the database  
until end of 2020

**841k**

loss events reported  
until end of 2020

## Operational losses

A recent report from ORX, an industry body collecting statistics on operational loss events, indicates that, at the end of 2020, its 81 member financial institutions reported an average of 63,349 operational loss events since 2015, totalling a gross loss of €16.7bn.<sup>1</sup> The majority stemmed from failed transaction processing or failed process management. While the financial industry focuses very intently on revenue growth and client acquisition, it pays far less attention to operational losses. Yet every one of these has an impact, and many of them are completely avoidable.


Firms are still burdened by a large number of legacy systems and databases, as well as spreadsheets, and these make it extremely difficult to identify a loss when it occurs. A recent (2020) Bank for International Settlements Working Paper found it took an average of 251 days for banks to discover an operational loss. Detecting these disconnects rapidly is vital, if banks are to stop costly operational losses.

## Human capital

The Workforce Institute 2021 Engagement and Retention Report suggests that 52% of workers are already looking for new jobs.<sup>2</sup> Staff turnover can cause disruption for any business, but where a bank loses personnel with a deep understanding of its operations, it can cause severe difficulties. Firms currently struggle to preserve this intellectual capital and retain it within the organisation.

Human workers are not perfect, either. They become tired and bored, make mistakes, and can only handle limited amounts of information. Tasks carried out by operations staff are often repetitive and mundane, too. Companies need technology that compensates for human limitations, and that frees people to carry out more meaningful, valuable tasks.

**52%**  
looking for new jobs



<sup>1</sup> orx.org. Annual Banking Loss Report, July 2021

<sup>2</sup> Forbes. Why The 2021 'Turnover Tsunami' Is Happening And What Business Leaders Can Do To Prepare, April 2021

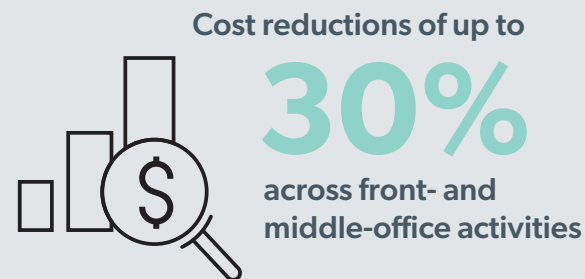
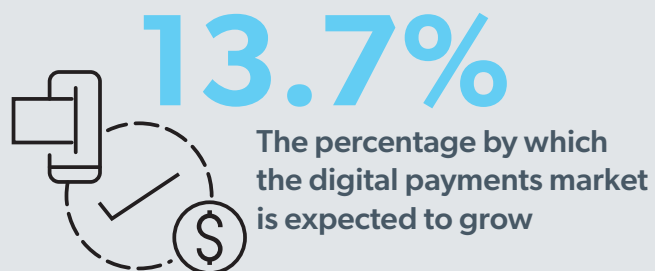




## Digital payments

The digital payments market is expected to grow by 13.7% from 2021 to 2026. The demand for cashless payments is driven by evolving consumer behaviour and a demand for greater convenience. Governments are also trying to reduce the cost of printing currencies and to counter the influx of fake currency, further promoting the use of digitisation.<sup>3</sup>

This trend, which has been accelerated massively by the global pandemic, is proving to be worrisome for banks. Digital payments are flowing away from established players towards cheaper service providers, and the high overheads created by traditional banks' inefficient operations make it challenging for them to offer services at competitive prices.



## Operational alpha

Achieving operational alpha entails performing with greater agility, efficiency, accuracy and cost-effectiveness than competitors, leading to superior margin, higher business volumes, and better customer retention. Banks must take a more proactive, innovative approach to achieving operational alpha if they are to outperform competitors and flourish.

Industry commentators suggest that lowering costs and becoming more efficient is possible for banks. Some believe that firms could achieve cost reductions of up to 30% across front- and middle-office activities in the next three to five years – although this assumes the use of advanced digital, automation and data/analytics capabilities. Automation and better use of data and analytics are vital, as firms typically spend 10%-20% of their cost base on data management and operations.<sup>4</sup>

<sup>3</sup>Report linker. Digital Payments Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026), March 2021

<sup>4</sup>Celent. Operational Alpha on The Buy-Side: Strategic Levers to Exploit 'Ecosystem in a Box' Paradigms, July 2021



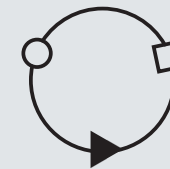
## Customer retention

Consumers' banking preferences are rapidly evolving. In Italy, Spain and the US, 15% to 20% of customers expect to increase their use of digital channels; in other markets that percentage ranges from 5% to 13%. The preference for handling everyday transactions digitally is as high as 60% to 85% across Western European markets, even for customers of 65 or over.<sup>5</sup>

With consumers moving towards digital channels, the financial industry has become more competitive. A recent study suggests that 22% of customers are "extremely likely, or likely" to switch their primary financial institution in the next year or two. For large multi-location banks the figure is 27%.<sup>6</sup> Digital banks are now challenging established financial services organisations for customer loyalty by offering new products and alternative business models. It is also easier than ever for consumers to switch banks.

For traditional banks, holding on to existing customers is vital. It has been estimated that the cost of acquiring a customer is five times higher than selling to an existing one.<sup>7</sup>

According to Bain & Co., increasing customer retention rates by 5% can lift profits from 25% to 95%.<sup>8</sup> With competition from non-traditional providers intensifying, there is a growing danger that banks become utility-like bodies serving these new organisations, making disintermediation with end clients a real danger. To counter this, firms must offer superior service levels and establish a far clearer understanding of customer requirements.



# 22%

of customers likely to switch banks in the next year or two

<sup>5</sup> McKinsey & Company. Reshaping retail banking for the next normal, June 2020

<sup>6</sup> Foresight Research. The financial brand, August 2020

<sup>7</sup> McKinsey & Company. Reshaping retail banking for the next normal, June 2020

<sup>8</sup> Sapio Research. Data Strategy and Customer Loyalty in Financial Services, 2019

# Artificial intelligence has the capacity to drive a revolution in these areas\_

Artificial intelligence (AI) can shine a powerful light on the huge volume of data that flows around financial institutions, and help turn it into actionable corporate intelligence. It is potentially transformative, allowing firms to harness the power of their data, unlock its value, and provide better services to their clients.

At SmartStream, we understand the power of AI to revolutionise data processing. Over the last three years we've made huge progress in creating powerful, AI-enabled technologies which transform the way firms manage and reconcile data. Our focus is on providing proven solutions that help the financial sector handle its data with far greater accuracy and speed than previously possible.

## The industry must overcome its concerns about AI

AI has immense potential for the financial sector, particularly in servicing back-office operational processes. The industry is deeply interested in these new technologies, with AI at the top of senior managers' agendas.

Yet the financial industry still remains cautious. There are some practical issues hindering adoption: deploying AI technology with old legacy systems is challenging, while AI can demand bursts of costly computing power. The cloud offers a route forward with respect to the latter difficulty, but legal concerns and fears over the security of sensitive data continue to inhibit progress.

While fears persist, we believe the sector should overcome its hesitation. Mature, reliable, AI-enabled solutions are now available, and the industry should embrace these advanced technologies with confidence.

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*Mature, reliable, AI-enabled solutions are now available, and the industry should embrace these advanced technologies with confidence.*  
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## SmartStream's journey to developing AI-enabled technology

SmartStream has been an industry-leading technology company for over four decades, and it has built an unparalleled knowledge of banking processes across the transaction lifecycle. The company has a long track record of investing in research and development and, three years ago, founded its own Innovations Lab.

The primary purpose of the Innovations Lab, which is based in Vienna and staffed by talented data scientists and technologists, is to apply AI and machine learning to the specific business issues faced by clients – its aim is not the development of a generic, AI-based product. As part of this process, the Innovations Lab collaborates with customers – including several Tier 1 banks – on proof-of-concept (POC) projects, to identify high value business cases for where AI can create proven cost and efficiency benefits.



SmartStream's Innovation Lab also provides reassurance to firms that have concerns about the use of AI. By running POC projects in collaboration with banks, using our AI technology in combination with their data and processes, the innovations team is able to demonstrate the incredibly positive results AI can bring, helping to allay the banks' fears.

SmartStream carries the PCI-DSS label, which is the most recognised data security standard, and has been certified at the highest level of security standards, as well as having the SOC 1, SOC 2, SOC 3 attestation. This ensures robust security controls are in place, including physical security, personnel security, fraud control mechanisms, IT & data security and data privacy.

## What AI-based technology has SmartStream created?

SmartStream has developed a sophisticated, yet easy-to-use and install, AI-enabled solution – SmartStream Air. It transforms data management and reconciliations processing, reducing tasks which traditionally take weeks or months to seconds.

In addition, we have developed an observational learning component, Affinity. This technology, which also forms part of SmartStream Air, automatically learns from human users' manual matching behaviours and, once it feels confident, takes over, carrying out matching based on the learned patterns. To further drive up efficiency, it makes suggestions for new improvements to processing activities. Affinity is being incorporated across SmartStream's solutions suite, including the applications deployed by SmartStream's Managed Services arm and in the cloud.

Our systems combine multi-year operational experience with AI to deliver actionable intelligence. They raise automation levels, helping banks to improve customer service, reduce operational losses, achieve superior margin management, and carry out more accurate data analysis.

SmartStream AI technology helps clients build a strong data governance framework to ensure data quality, completeness and accuracy of reporting.

SmartStream's AI-enabled solutions are already in use, including outside the financial services sector, in areas as diverse as manufacturing and shipping. They solve real-world business issues, and are proven to create cost-efficiency benefits and enhanced services.



SmartStream Air

# SmartStream's unique approach to AI\_

We believe that AI works most effectively when integrated within a reconciliations platform. By keeping data inside the main processing platform – rather than taking data out, applying AI to it externally, and then feeding it back in – the workflow is prevented from becoming disjointed, facilitating superior STP rates and reporting. We have therefore developed AI capabilities embedded in our technology, which can be applied to specific use cases. We also believe that the integrated approach creates a far better experience for the user.

To promote security, each SmartStream client has its own, designated space, so there is absolutely no danger of results or machine learning patterns becoming cross-contaminated. We do not reuse models, and instead develop models separately for every tenant.

We have a Managed Services business that operates our own technologies on behalf of clients. This means that we experience first-hand the difficulties the industry faces, which helps us understand precisely where introducing AI into our own solutions can bring the greatest benefits and efficiency gains.

# AI-enabled technology is having a positive impact on the financial industry\_



# Reducing operational losses



At present, reconciling data can be a slow and manual process – making it an expensive and sometimes error-prone activity. Before firms match data, they have to define deterministic rules. Data has to be cleansed and normalised prior to use, which takes time. Match rules must be continually adjusted, to keep match rates up, and every time a new reconciliation is onboarded, more expensive manpower and effort is required.

Our AI-based application, SmartStream Air, completely changes the rules. Users load raw data, in real time, in almost any structured data format. The application then studies the material and develops matching rules autonomously, using unsupervised AI. SaaS-based and cloud-native, it requires no complex IT set-up, configuration or training projects, making it very cost-effective to work with.

Another important advantage AI brings is that it can cope with huge complexity, spotting patterns, at speed, in vast quantities of data. Our AI-based technology can sift through large volumes of material, rapidly identifying breaks and anomalies. It allows firms to understand how and why discrepancies are occurring, and to establish in what way these contribute to operational losses.

SmartStream Affinity, for example, is very good at detecting subtle, recurring patterns, which human users cannot spot as the data involved is too complex or too great in volume. Having identified an issue, the machine presents it to the human operative to deal with, meaning problem areas can be remediated quickly.

Affinity is also adept at filtering data to remove ‘false problems’, allowing users to focus on genuine breaks and either remove them altogether, or route them to the individual or department best suited to handling them – allowing companies to deal with potentially costly trouble spots promptly.



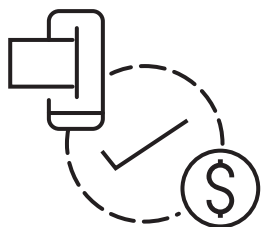


# Human capital

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*Driving up processing speeds...*  
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AI enables back-offices to become more dynamic, productive places, releasing people from carrying out time-consuming, menial tasks and empowering workforces to process a larger number of transactions. SmartStream Air, for example, removes the need for users to understand the data being matched, or to configure the logic which underpins the matching process. Business users therefore do not have to wait for staff with specialist configuration skills to help them – reducing delays and driving up processing speeds.

A huge amount of resource time can be saved cumulatively using Affinity, as it releases workers from manual matching to focus on tasks of greater value. In addition, through its ability to learn from human users' manual matching activities, it stops corporate intelligence from being lost – should personnel be absent or leave – also preventing overdependence on key members of staff.



# Digital Payments

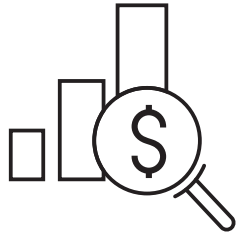
Where digital payments are concerned, speed is of the essence, and real-time processing is essential. SmartStream's digital payments solution – with integrated AI – injects much-needed speed into firms' processing activities. It automates reconciliation, settlement, fee calculation and dispute management processes, supporting payments players of all sizes, as well as enabling rapid onboarding and complete transaction lifecycle management. Sophisticated analytics give valuable insights into the cause of failed or investigated payments, empowering firms to tackle problems at source and to understand the level of effort required to deal with different exception types, payment systems or correspondent banks.

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*Gaining valuable insights...*

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# Operational alpha

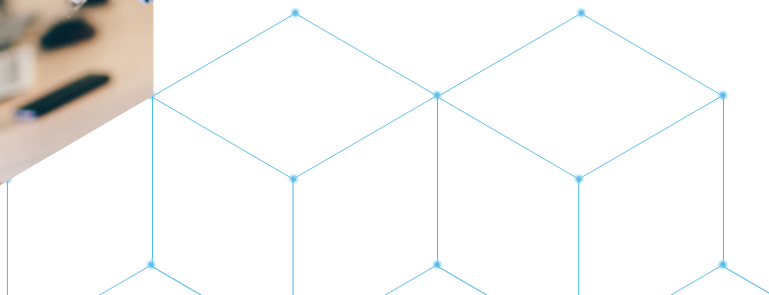


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*Leaner and more cost-effective operations...*  
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Operational alpha entails having leaner and more cost-effective operations, in order to stay ahead of competitors. A recent pilot project, carried out in collaboration with a Tier 1 bank, to integrate Affinity with the bank's TLM Reconciliations Premium platform, illustrates how this can be achieved.

The bank was highly automated and had excellent match rates (95%), but wanted to use AI to handle a residual pool of complex cases which had to be dealt with manually. Affinity was deployed to reduce this final percentage of manual matching, creating an opportunity to make significant savings. For this large Tier 1 bank, processing huge volumes of transactions, removing the last few per cent of manual matching adds up to a potential cost reduction running into millions of dollars.

AI can boost operational alpha in other ways, too, for example, by ensuring that the quality and efficiency of processing does not slip. As business and data evolves, the static rules underlying matching activities start missing details, and so match rates go down. Affinity shadows human users as they pick up exceptions, learning from them, and constantly ensuring that rules do not go stale, thereby keeping match rates high.





# Customer retention

The firms that are most successful in retaining customers are those that serve clients rapidly and efficiently. AI-based technology can inject added speed and efficiency – SmartStream Air, for instance, facilitates the quick onboarding and implementation of reconciliations, improving customer service levels. It also allows new data types or business scenarios to be introduced easily, creating the agility and flexibility to respond to evolving customer needs.

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*Ready to respond to customer needs...*  
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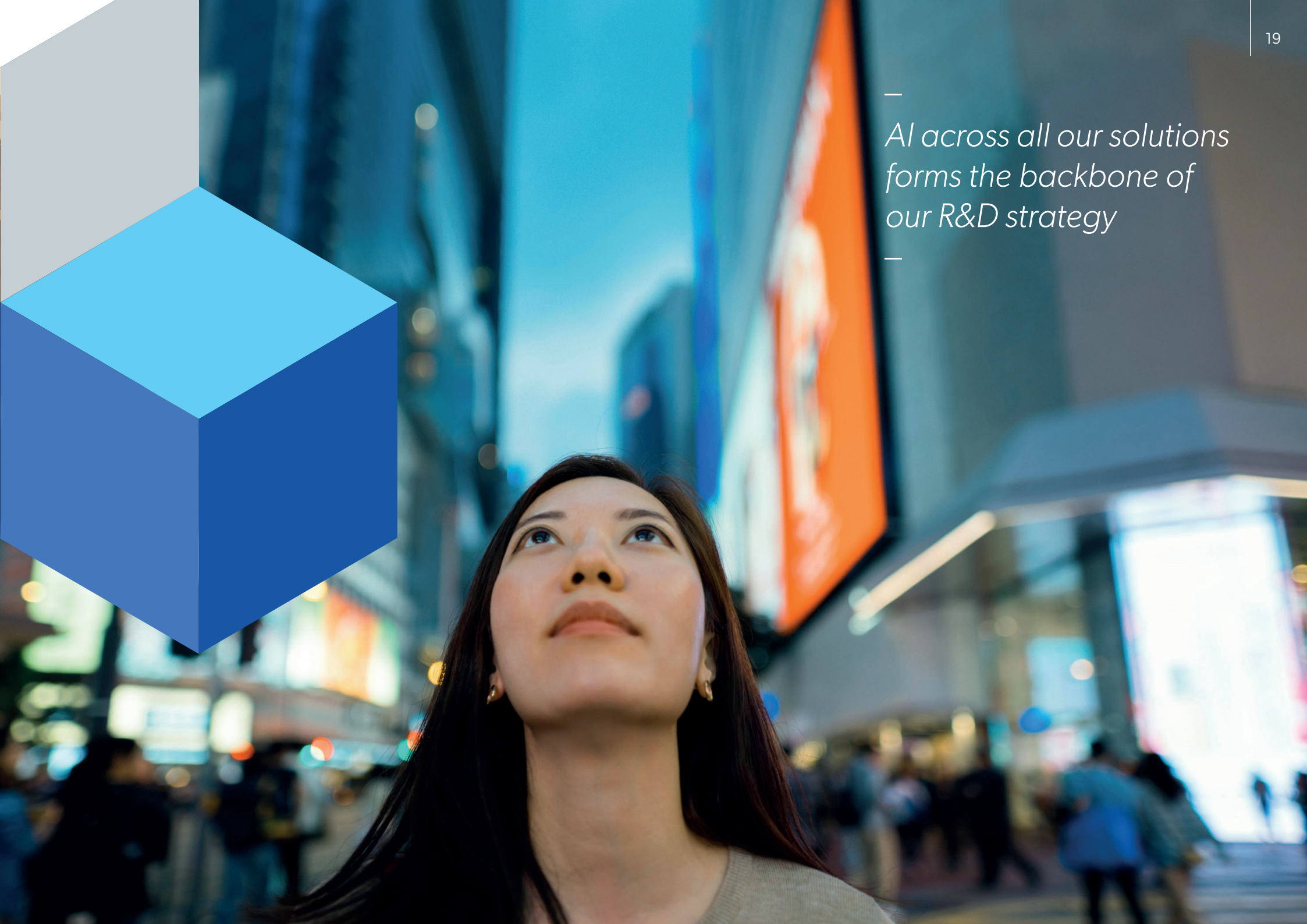
# SmartStream's future vision for its AI-based technology\_

The introduction of AI across all our solutions forms the backbone of our R&D strategy, with the aim of introducing even greater scalability and ease-of-use. A core focus has been improving reconciliations processing, but we are also applying AI in a number of other ways too, for example, to cash and liquidity forecasting.

Our next research goal is the application of AI to exception management, as we believe that today's break resolution processing is still too slow and cumbersome. Many exceptions are not in structured information but in unstructured prose, e.g. pdfs or emails, making this area very challenging – although one which we feel can only truly effectively be met through the use of AI. We are already making significant progress in our Innovations Lab and the results have been very encouraging.





A woman with long dark hair is looking upwards with a thoughtful expression. The background is a blurred city street at night, filled with lights and buildings. A large, stylized blue cube graphic is overlaid on the left side of the image, with its top face in a lighter blue and its side faces in a darker blue. The text is positioned in the upper right quadrant of the page.

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*AI across all our solutions  
forms the backbone of  
our R&D strategy*  
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## About SmartStream

For more information visit:  
[smartstream-stp.com](https://smartstream-stp.com)

SmartStream is a recognised leader in financial transaction management solutions that enables firms to improve operational control, reduce costs, build new revenue streams, mitigate risk and comply accurately with regulations.

By helping its customers through their transformative digital strategies, SmartStream provides a range of solutions for the transaction lifecycle with artificial intelligence and machine learning technologies embedded – which can also be deployed in the cloud or as managed services.

As a result, more than 2,000 clients – including 70 of the world's top 100 banks, rely on SmartStream Transaction Lifecycle Management (TLM<sup>®</sup>) solutions to deliver greater efficiency to their operations.