

# TRANSFORMING THE BACK-OFFICE: AI-ENABLED TECHNOLOGY

***Banks must process an ever-growing number of transactions. AI-based reconciliations technology, says Andreas Burner of SmartStream's Innovations Lab, can play a transformative role in helping banks cope. Even complex areas, such as exceptions management, are now being revolutionised by the power of AI.***

A vast amount of data currently flows around financial institutions. Transaction volumes have ballooned, a trend that SmartStream – which also provides managed reconciliations processing services to financial institutions – has experienced first-hand. Financial firms are under pressure to manage growing transaction volumes, yet must do so without increasing the size of their operations teams, thereby adding to overheads.

This is only one side of the story. Beyond the power to reconcile big data, and the advantages that this brings, there also lies the question of being able to do so in real time, including, critically, the ability to resolve problem areas such as exceptions.

Unfortunately, some firms are struggling to understand and control the large quantities of increasingly complex data which passes through them – particularly those hampered by ageing legacy systems and inefficient manual processes. A lack of control over their data, as well as an inability to gain a full and rapid understanding of the information that flows around them, exposes firms to heightened risk. Even more concerning, the industry is plagued by operational losses – many of which are entirely avoidable.

To make matters worse, added pressure has been piled on back offices by the explosion in digital payments, driven by the coronavirus pandemic. Responding to the mushrooming demand for “instant” is proving tricky for the traditional back office, and it is clear that an alternative – and far more innovative – approach is needed if financial firms are to meet this challenge.

Skills dependency is another problem area for the financial sector. Important operational knowledge is often lost when staff retire, leave or are promoted, and companies must invest in systems that allow them to create greater resilience against vital corporate intelligence being lost. Freeing up back-office staff from repetitive, low value processing activities, to carry out higher value tasks, such as exception management, is another area in which financial institutions need to make further progress.

In order to handle the huge volumes of information now at play, financial institutions require technology – such as cloud-native solutions – which are capable of processing millions, or even billions of lines of data per second. They need to harness AI and machine learning (ML), too, if they are to find new ways of increasing efficiency and driving up processing rates without adding extra staff to operations teams or pushing up costs.

AI and machine learning are ideally suited to handling complex data sets. They can detect subtle patterns in huge volumes of data, in a way the human eye never could, facilitating understanding. Their ability to tackle vast quantities

of information also means they can inject much-needed speed into back-office processes. They allow banks the opportunity to unlock the true value of their data, turning what is currently a burden into a valuable asset.

SmartStream has created sophisticated, AI-enabled solutions which transform the way firms manage and reconcile data. Our systems combine multi-year operational experience with AI to deliver actionable information. They boost automation, helping banks to improve service levels, stem operational losses, achieve superior margin management, and perform more accurate data analysis. These solutions are already in use, and offer proven cost-efficiency benefits.

Five years ago, SmartStream, which has a long track record of investing in research and development, founded its own Innovations Lab. The purpose of the Lab, which is based in Vienna and staffed by highly talented data scientists and technologists, is to apply AI and ML to the specific business issues faced by our clients. The Lab collaborates with customers – including several large Tier 1 banks – on proof-of-concept projects, to identify high value business cases where AI can create proven cost and efficiency benefits.

The Innovations Lab provides a great deal of reassurance to firms about the use of AI. By running proof-of-concept projects in partnership with banks, using our AI technology in combination their data and processes, firms are able to see for themselves the incredibly positive results this technology brings, which does much to allay any lingering fears.

About Andreas Burner, Chief Innovation Officer,

Andreas Burner has been with SmartStream since 1997 and has over 20 years of experience in building financial service solutions for leading international banks. He is the head of the SmartStream Innovation Lab with a mission to establish a culture of innovation within SmartStream. Andreas works closely with all teams to identify, prototype, and deliver new technologies to the SmartStream product range. His team of researchers are working on blockchain and artificial intelligence technology.

In parallel, Andreas pursued an international academic career and contributed to the field of machine learning in the medical domain with AI technology that assist in the diagnoses of diseases.

Andreas holds a MSc in Computer Science with a specialisation in Artificial Intelligence from the University of Technology, Vienna, and a MA in Mediation and Coaching from ARGE Educational Management, Vienna.



During the course of these projects, we have been able to prove to the Tier 1 institutions we partner with that significant efficiencies can be achieved through the use of AI-enabled technology. Where AI and machine learning is employed in reconciliations processing, we have demonstrated that efficiency can be improved by as much as 20%. This boost provides banks with the capacity to scale in response to growing transaction volumes.

Alongside these collaborations, we have developed a highly advanced, yet easy-to-use, AI-based application, called SmartStream Air. It has a truly transformative impact on the onboarding and processing of reconciliations, reducing tasks which have traditionally taken weeks or months to a matter of seconds.

SmartStream Air requires no training or configuration, and is easy to get started with. Users simply upload raw data to the application, in any structured format. The application then matches the information, using unsupervised AI. Transactions can be streamed in real time, which is useful in areas where speed is essential, for example, digital payments. Using SmartStream Air, firms can reconcile complex data sets rapidly and accurately, driving up processing speeds. In addition, the solution reduces skills dependency, e.g. on configurational skills and maintenance.

SmartStream has also developed an 'observational learning' component, called Affinity, it learns from the manual matching behaviours of human users. As well as forming part of SmartStream Air, it is being embedded across our existing solution suite, including in the technology used by our managed services arm.

A recent project, carried out in collaboration with a Tier 1 bank, to integrate Affinity with the bank's reconciliations platform, demonstrates the useful role Affinity can play in boosting

efficiency levels. The bank has high automation levels and excellent match rates but wanted to tackle a residual pool of manual matching. Affinity was used to deal with this remaining group of complex cases, reducing the final percentage of manual matching and creating potential savings – and for large firms such as this, which handle huge volumes of transactions, shaving off the last few per cent of manual matching can add up to a cost reduction of millions of dollars.

Importantly, by learning from the matching activities of skilled operational staff, Affinity preserves vital corporate intelligence, preventing it from being lost or disrupted by events such as staff absence or holidays. Its ability to learn rapidly from human users also frees up staff to concentrate on higher value tasks, for example, exception management.

SmartStream, which invests heavily in R&D, maintains a continual focus on innovation. As part of this process, the company has recently developed SmartStream Air v.7. This application aims to inject greater efficiency and control into exceptions management, through the use of advanced cloud-native AI technology. It is a first in the industry and an advance which the market is currently much in need of.

At present, exception management is controlled by users or user-defined automation rules. SmartStream Air v.7, however, does things differently. It streamlines today's cumbersome and time-consuming exception handling processes by learning directly from an experienced human reconciler's actions or historic data. When trained, the AI underpinning the application is able to predict fields and workflows for managing exceptions. SmartStream Air can provide suggestions to the user or fully automate processes, significantly improving STP rates. In

addition, it frees up reconcilers to focus on other tasks, helping businesses reduce costs.

SmartStream Air v.7 massively reduces the time spent managing exceptions that arise from unmatched data, or from data integrity issues. It automatically classifies the priority of an exception, assigns it to the relevant teams, adds labels (including statuses), and populates exception detail fields, allowing reconcilers to carry out their work more effectively. SmartStream's intention is to integrate these new AI-based exception management capabilities across its middle- and back-office solutions, enabling clients to experience the advantages this highly advanced technology can bring.

In conclusion, AI and machine learning, offer institutions a potentially transformative way forward. In the future, these technologies are likely to play a pivotal role in helping firms process, control and understand data more effectively, assisting them to achieve superior margin, preserve vital corporate intelligence, increase business volumes and improve customer service. Some firms continue to hesitate, but with robust, proven AI and ML-based applications now available, companies should overcome any lingering fears they may have, and take advantage of the benefits these systems can create. Indeed, in today's rapidly changing and demanding financial landscape, financial institutions can no longer afford to delay – they must embrace these innovations if they are to survive and flourish.



# Empowering innovation



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## Proven AI-enabled cloud solutions

SmartStream has been a trusted partner of the financial industry for more than four decades. We have always been at the forefront of developing transformative solutions for middle- and back-office operations.

Our solutions and services span the transaction lifecycle and incorporate the very latest AI and machine learning technologies. These can be accessed in a variety of ways - via APIs and micro-services, or deployed as managed services and cloud environments.

Find out why many of the top financial institutions globally continue to rely on our innovations.

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