

# Adopting AI for Superior Reconciliations



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# INTRODUCTION

Rising compliance costs and greater competition are narrowing margins in financial services, even as the adoption of new technologies in other industry segments are raising customer expectations across the board. As a result, financial institutions are looking at how to wring more value from their activities, while streamlining their operations in order to minimize costs.

In response, financial services firms are turning to emerging technologies like Artificial Intelligence (AI) and Machine Learning (ML) to automate processes and activities that previously required a human being.

Firms' reconciliations and exceptions management processes represent a kind of low-hanging fruit for the application of emerging technologies. They are human labour-intensive, and as such expensive and prone to error. In many cases, post-trade systems are fragmented, organised by silo, and incapable of meeting the new demands being placed upon them by the business side.

By streamlining their reconciliations processes through automation, firms see an opportunity to reduce the number of exceptions they manage and the time it takes to deal with them. This approach furthermore can reduce operational risk, boosting the firm's overall financial position, both in terms of reduced losses and regulatory capital.

This white paper looks at the current state of play and the opportunity for the adoption of AI and ML in the reconciliations process. It explores what's needed to streamline exception management and minimize the need for human intervention. Finally, it outlines the capabilities of SmartStream AIR, and explains how this new AI-based initiative can help improve firms' reconciliations processes in terms of speed, accuracy and cost.



## THE LIMITATIONS OF TODAY'S RECONCILIATIONS PROCESS

Reconciliations represent a hot button for financial institutions seeking to reduce their operational overheads. Reconciliations are needed at many levels, and they are often not very well served by the market in terms of viable, cost-effective solutions. For a major financial institution with activities in many areas of business, the transaction process is likely to require a reconciliations process across multiple functions, including corporate actions, digital payments, invoicing from brokers across different funds.

In reality, any function that generates large volumes of data will most likely need some form of reconciliations process. This typically includes matching of transaction records, identification of exceptions and then passing along those exceptions for investigation and resolution, often by human business analysts. Over the years, firms have taken various steps to replace inflexible legacy systems, for example by building an internal processing utility, utilising a hosted or SaaS-based service, or outsourcing the entire transaction processing operation. But whatever their approach, dealing with the inevitable reconciliations quickly, efficiently and at low cost still remains a significant challenge.

This is particularly true where business activities generate high volumes of increasingly complex transaction information. Even where firms have taken steps to address this issue, existing reconciliation solutions often require many manual configuration steps at set-up, making them difficult to get right. Many firms, moreover, are running rules-based reconciliations systems, which often lack the flexibility required to meet today's complex and rapidly changing requirements.

But the main reason the reconciliations process attracts so much attention is cost: Because it involves so much human input, it is very time-consuming when done properly and this makes it expensive.

So, in summary, there is a wide range of reconciliations challenges that AI and ML could be applied to, among them exceptions management within payments, clearing and settlement, and corporate actions. This remains a significant challenge for financial services firms, market infrastructures, and other industry players. At the moment, most exceptions management is handled manually, which is time- and resource-intensive and therefore expensive. Manual exceptions management is also a significant source of operational risk for firms – since humans make mistakes, or can use the manual process to commit fraud.

The good news is, however: AI can help.



Reconciliations are not a mathematical problem, but rather a problem where business logic matters. The process necessarily involves reference numbers, identification codes, transaction amounts and dates. Rather than attempting to match these elements into a combination that works, AI can help understand situations where breaks may occur, predicting exceptions hot spots and helping analysts rapidly identify and resolve issues.



## WHAT'S NEEDED: ADDING AI TO THE RECONCILIATIONS MIX

Applying new technologies like AI and machine learning to reconciliations can greatly speed up the process while at the same time improving the overall outcome.

Some practitioners liken the impact of AI in reconciliations to the difference between a simple paper map and the use of phone-based apps like Google Maps. To navigate through a new city, a traditional map is useful for setting the route to your destination, usually resulting in a positive outcome: arrival at that destination.

But an app like Google Maps takes the process a step further. It allows you to set the route to your destination but it contains a lot of additional data, which it uses to select the best route, or at least a number of alternatives. This data may include potential traffic bottlenecks, ongoing road works or route closures. The result is an improved outcome - a quicker or less stressful journey - based on highly relevant information and metrics about the landscape you are dealing with.

This supplemental information adds value and gets you to your destination more effectively and efficiently. AI can add a similar dimension to reconciliations in financial services. By adding contextual data - often in huge volumes beyond the capabilities of a human operator - an AI-based reconciliations system can rapidly identify problem matches and bottlenecks in the process.

Because it can handle millions of transactions or events, an AI-based system can provide a holistic view of a firm's transactions landscape, in effect taking on the role of a single strategic reconciliations platform, transcending business silos and replacing multiple point solutions.

As with the navigation app, the role of AI in reconciliations is to simplify a process that is too complex for humans to handle under any kind of realistic and useful timeframe. AI is able to look at huge volumes of data, rapidly identify problems and turn those transactions over to human analyst teams that are better suited to deal with them in-depth. In short, it takes on a task humans are not well suited for, leaving them to add value where it's most needed.



## THE BENEFITS OF AN AI-BASED APPROACH

AI is the classification, categorisation and grouping of data, using multi-dimensional analysis to identify trends. It is a tool that can be used to look at data in more dimensions than a human would be able to do over the same period of time, and the ability to perform analytics more quickly.

Machine Learning - seen as a strain of AI - focuses on automatically learning and then making predictions based on data. It is the ability to train a machine to understand what a human interaction is doing, and then predict the circumstances in which that interaction would need to be replicated.

Further AI techniques - Natural Language Processing (NLP) and Natural Language Generation (NLG) - allow analysts to engage with systems using natural language, voice, and text, allowing them more easily to deal with structured and unstructured data.

Combined, these processes can help automate more complex processes, further reducing costs, improving efficiencies, and reducing certain types of operational risk. In the reconciliations space, machine learning can help a firm to simplify the current situation and rapidly take actions to address any identified issues. The result is more proactive middle and back office operations that are able to take a pre-emptive approach to managing exceptions as they occur.

Adding AI to the reconciliations or exceptions management function, irrespective of the business activity in question, can bring significant operational benefits to the post-trade environment. Establishing a single strategic platform that makes use of AI techniques reduces operational risk by automating manual and paper-based systems to create proactive and exceptions-based transaction lifecycle processing, resulting in improved STP rates.

This approach can facilitate rapid on-boarding of reconciliations without compromising on the accuracy of match results, and offer greater visibility into reconciliations and outstanding positions by taking a pre-emptive approach to managing exceptions as they occur.

AI supports context-based escalation, allowing teams to higher transaction volumes with a lower headcount. Existing and new reconciliations can be migrated onto the system rapidly, resulting in enhanced customer service as reconciliations evolves from data matching function into a value-added exception investigation and resolution resource.



## AI IN THE RECONCILIATIONS PROCESS: INTRODUCING SMARTSTREAM AIR

Speed is important - and challenging - in reconciliations. Quickly identifying and addressing matching issues streamlines operations, reduces cost and mitigates operational risk. Reconciliations requires the rapid validation of very large data sets, perhaps matching files consisting of millions of data points.

SmartStream Air (AI Reconciliations) combines SmartStream's years of experience in reconciliations and exceptions management with the latest developments in machine learning and AI technology. SmartStream Air uses AI algorithms to auto-configure reconciliations, irrespective of the data structure or format. Thanks to the technology underpinning the SmartStream Air platform, users can instantly see where exceptions are, thereby avoiding a lengthy, iterative process of trying to work out where the data mismatches lie.

As such, SmartStream Air reconciliations are auto-configured end-to-end in seconds, resulting in immediate matching results and allowing exceptions to be followed up after just a few seconds. In a typical deployment, reconciliations teams can drop in two feeds of transaction data and the system will validate the data, match transactions - even where there is more than one value for a particular field - understand and apply the appropriate transformations, and finally alert the user to any exceptions that require manual intervention. These processes and calculations - which would take a human operator hours of work - are performed in seconds.

As with other areas of financial services in which AI is being deployed, firms are using the technology as a means of automating manual processes, greatly reducing the need for human exceptions handling. This cuts cost while at the same time reducing operational risk due to human error.

The scope for savings and risk mitigation is broad. While reconciliations is the clear low-hanging fruit, exceptions will be an ongoing requirement for the financial services industry - notwithstanding the acceptance of Blockchain and other distributed ledger technologies (DLT). The state of data within the financial services industry remains problematic, and so until the data challenge is fully resolved, exceptions management will be needed. The more automated that this can be made - to reduce costs and risks, but also to speed processing up - the better.

SmartStream Air can augment existing reconciliations platforms and processes to speed up exceptions handling. Traditional reconciliations solutions remain useful for resolving complex issues, but configuring them takes time and generally entails IT support. SmartStream Air eliminates the lengthy configuration times, allowing users to reconcile complex sets of data in moments, whenever they need to. This



avoids a great deal of time and effort, as well as making business users far less reliant on support from teams of operations and IT staff, which also helps keep costs down.

SmartStream Air automates manual and paper-based processes to efficiently detect, report, prioritise and resolve exceptions, reducing operational cost. At the same time, improved consistency through workflow-based processes results in improved exception repair and resolution.

Through these processes, SmartStream Air rapidly and accurately identifies exceptions that require human attention. The system understands the structure of the data, runs the reconciliation process, and presents the results to users. By focusing on critical reconciliations data, SmartStream Air frees analysts to work only on exceptions and disputes, which is where their value is most needed.

The ability of SmartStream Air's AI abstraction layer to compare two data files and identify only those elements requiring a human fix boosts back office efficiency, as staff move from a pure transaction matching role to managing only the transactions that represent the biggest risk.



## ABOUT SMARTSTREAM AIR

SmartStream Air represents the next evolution of reconciliations technology. It combines SmartStream's expertise, gained over many years of experience, and the latest developments in machine learning and AI technology. Thanks to the super speedy technology and AI algorithms, you can instantly see where exceptions are, releasing you from a lengthy, iterative process of trying to work out where the data mismatches lie. Importantly, as SmartStream Air is underpinned by sophisticated machine learning technology it is continually improving, meaning that results only get better as time goes by





## ABOUT SMARTSTREAM

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 regulation.

By helping its customers through their transformative digital strategies, SmartStream provides a range of solutions for the transaction lifecycle with AI 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®) solutions to deliver greater efficiency to their operations.





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