



# ADAPTING TO CHANGING WORLD – DATA AS A DIFFERENTIATOR

Securities Services



The securities services world is changing. While the adoption of innovative real-time data tools and analytics was happening well before COVID-19, the pandemic has accelerated the pace of transformation. If harnessed properly, data can help clients extract insights, make operational improvements and enhance services to their downstream customers.

### A tough climate

Global custodians and broker/dealers were already facing serious revenue contractions pre-COVID-19 exacerbated by falling client fees, declining margins off previously lucrative ancillary activities such as FX and securities lending, and the introduction of new regulations. There were fears initially that COVID-19 would prove especially ruinous for securities services with an Oliver Wyman research paper<sup>1</sup>, for example, warning that the industry was at risk of incurring losses of between 10% -15% last year.

As we enter into the second year of the pandemic, the industry is still facing revenue shortfalls. In order to return to profitability, custodians and broker/dealers need to identify more operational efficiencies within their own businesses while making material improvements in the way they service their own clients. It is here where data, if harnessed correctly, could make a world of difference.

### Data is the foundation

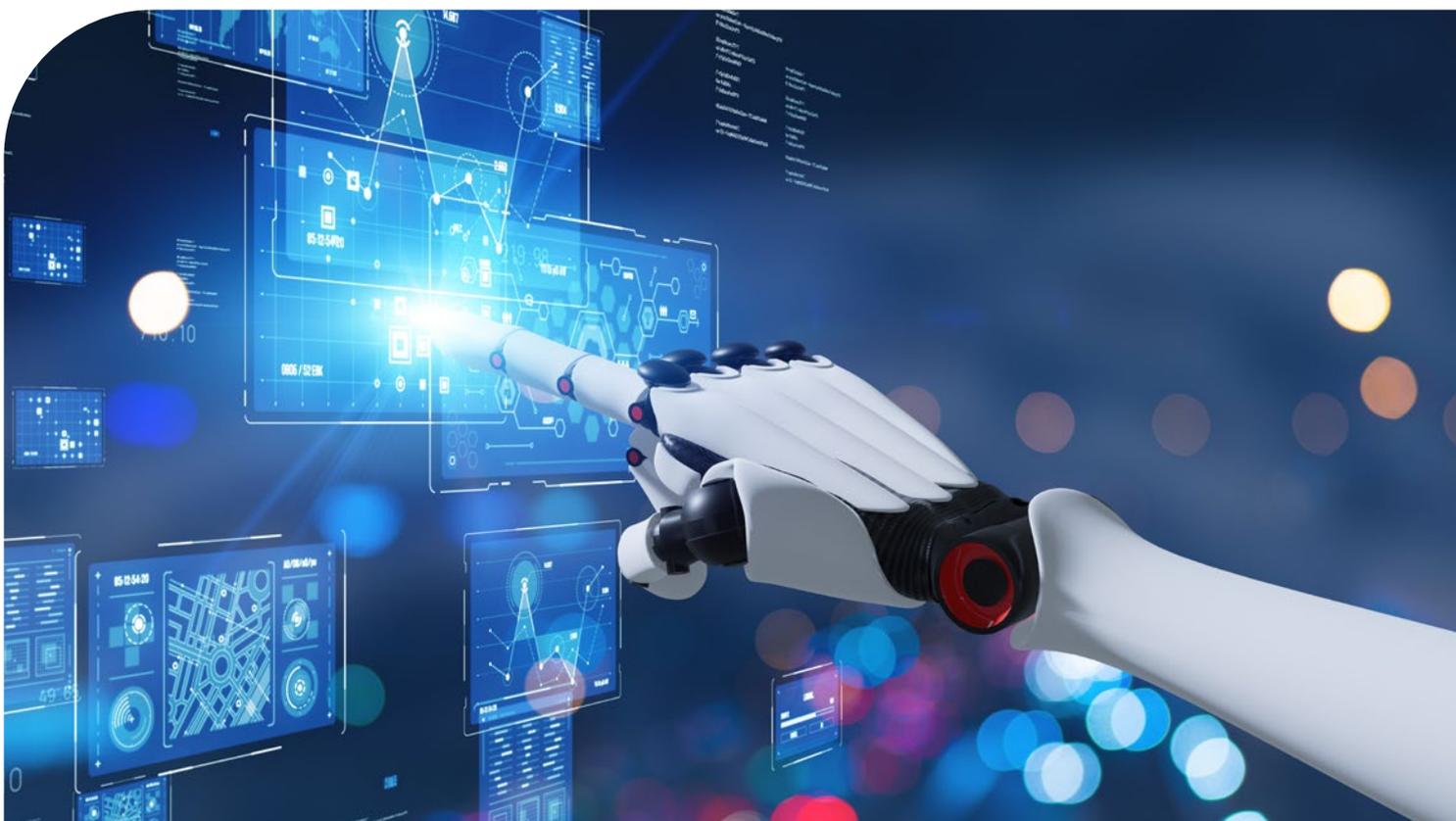
Underpinning the technologies driving efficiencies in securities services – whether it is distributed ledger technology (DLT), application programming interfaces

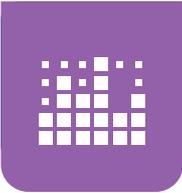
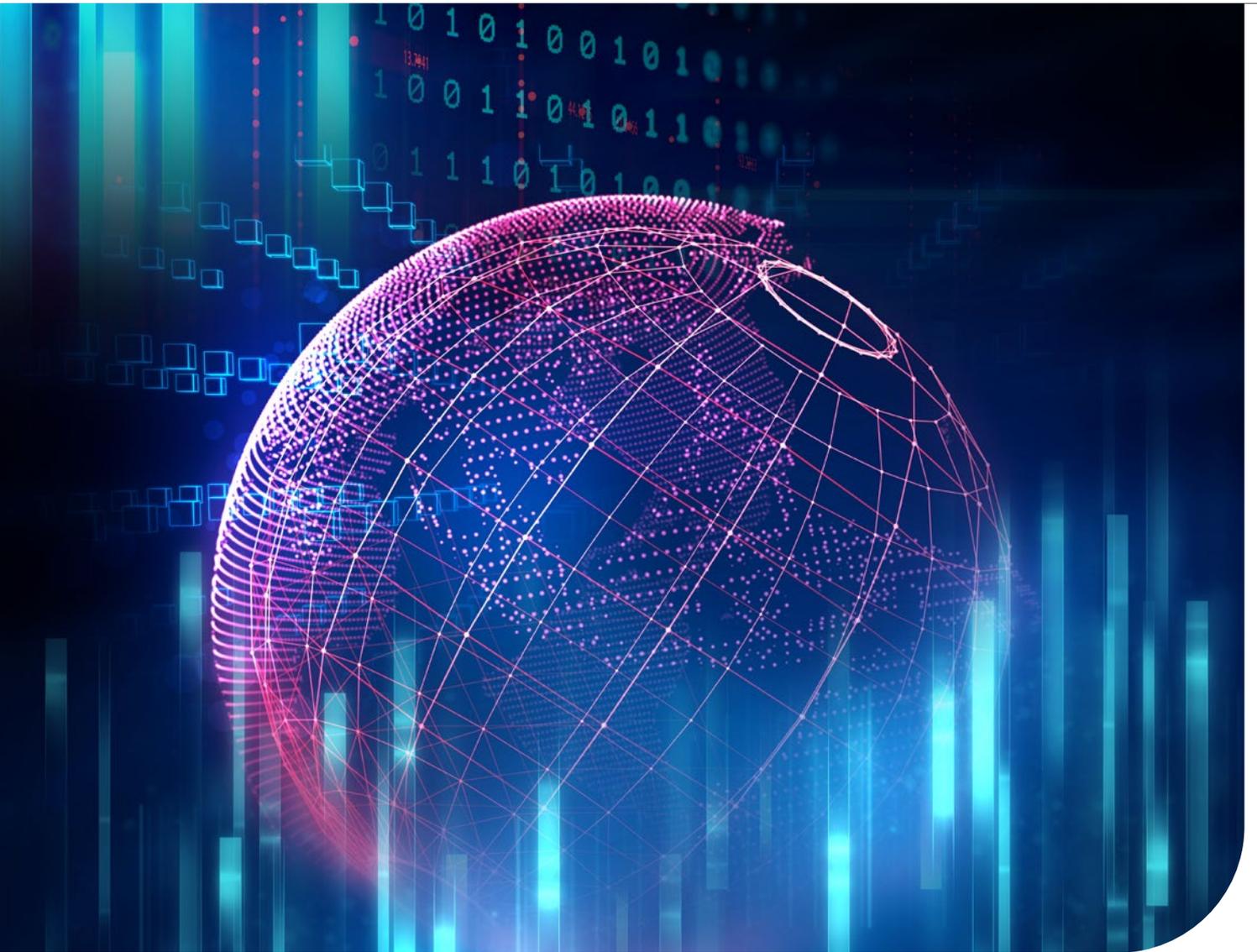
(APIs), robotic process automation (RPA) or artificial intelligence (AI) – is data. However, in order for these technologies to be leveraged successfully, the underlying raw data fed into them needs to be accurate, organised in a structured format and stored in a centralised repository, such as a data lake or relevant data stores.

“The way in which we look at our data strategy for securities services is about driving efficiency and value for the clients. As an overarching vision, we have three pillars in terms of how we think about data,” said Fiona Horsewill, Global Head of Data for Securities Services at Citi. The first pillar is focused on delivering Citi-held data to clients through their choice of delivery channels. The second is about delivering data to help customers with their decision-making. We also house client data and provide white labelling of the platform, which we undertake on behalf of certain clients,” added Horsewill.

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<sup>1</sup> Oliver Wyman – Steering through the next cycle

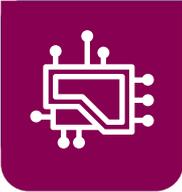




**Deliver Citi-held data to clients through their choice of delivery channels**



**Deliver data to help clients with their decision making**



**House client data and provide white labelling of the platform**

However, consolidating and systematising data can be a very difficult exercise owing to the sheer volume of information out there. It therefore requires providers to have thorough governance processes in place to check that data is accurate and has been sourced legitimately. In other words, banks need to verify that data has not been obtained in contravention of local data laws, such as the EU’s General Data Protection Regulation (GDPR).

“There is a comprehensive global framework which describes how data should be organised, and this is something that our Securities Services business fully adheres to. We use appropriate, trusted data sources for all of our data. Any data that comes from a source must be completely immutable,” said Setanta Mathews, Global Head of Data and Analytics, Securities Services Technology at Citi. With a robust data infrastructure as a foundation, custody providers can then overlay technology to create valuable solutions for clients.

### Actionable insights through APIs

The delivery of data in real time through APIs can help clients glean valuable insights, automate operational processes, reduce risks and help achieve significant cost savings. “Many of our clients want to interact with their data via a dashboard. It is vital we look at the client persona, namely whether they are an operations manager or a network manager, and understand what their role is,” said Horsewill.

“Imagine if we had an operations manager responsible for settlements in a certain region. We have a workflow tool which shows where a transaction is in its lifecycle, and provides status updates in real-time. This allows the individual to prioritise based on whether the transaction is taking place in a risky market. They can identify if there is an exception and drill down into it, but if everything is matched, then they do not need to worry about it,” explained Horsewill.

Such benefits are vital in the context of the unprecedented volatility clients are now facing. For example, during the pandemic, Citi’s API volume steadily increased by 7k times. APIs are a more efficient mechanism by which to disseminate data to clients, eliminating the need for manual reporting.

APIs could also play an integral risk management role, if vital communication channels between financial institutions and a market infrastructure or SWIFT went down. Some market participants feel that it would be remiss not to have contingency plans in place, which could be enabled through APIs. This would allow institutions to switch from a primary to a secondary communication channel with market infrastructures in a seamless manner. However, to achieve interoperability between organisations, there need to be comprehensive standards on APIs, which is a challenge the industry still must address.

### Delivering benefits to clients through the power of APIs

In order to help solve our clients’ important requirements around visibility and transparency, Citi has developed a number of innovative APIs which are already in use with some clients.

For instance, Citi’s Intraday Cash Balances lets clients check their balances frequently allowing them to monitor intraday exposures and ensure their accounts are adequately funded. Through Citi’s Billing API, clients can now obtain detailed invoice information by account to feed their internal systems so that they can allocate the costs and track profitability at a granular level. And finally, Citi’s Account Details API retrieves a defined list of account details on demand and automatically

populates the core systems with the relevant data, eliminating what was previously a labour intensive process. This means clients no longer need to send MT599 messages to Citi to identify the status and details of accounts opened in the local markets.

### The new frontier of machine learning

Elsewhere, the bank is leveraging machine learning techniques to comb through its own data and produce analytics off the back of it, in what could net enormous efficiencies for clients. “In the Securities Services space, one application for machine learning could be to use statistical and machine learning techniques to anticipate and predict settlement failures,” said Anissa Dhouibi, Global Head of Equities Quantitative Analysis at Citi.

“We can use machine-learning techniques, such as random forest or logistic regression, to predict what trades will fail to settle, using features like trade information, client characteristics, or broker and counterparty information.



The relationship between those features and the outcome of the settlement are going to be very complex, meaning that simpler linear statistics are unlikely to work, but this is an area where machine learning can add a lot of value,” Dhouibi added. With the introduction of the Central Securities Depositories Regulation (CSDR), which will impose harsh penalties and mandatory buy-ins for settlement fails, this technology could prove invaluable by saving clients money on penalty costs.

As part of its focus on predictive analytics, Citi is conducting a proof of concept (POC) into a technology tool otherwise known as Data Robot. “One of the things we like about Data Robot is that it negates the need for data scientists. By using Data Robot, we can develop fairly accurate predictive models based on the information

which we feed into it. We have already provided 10 million transactions to Data Robot and it has developed models off the back of it. In time, we will put these models onto our internal cloud,” said Mathews.

#### Maximising data to maximise success

With deep pools of data now available, providers need to be able to leverage next-gen technologies such as machine learning to share cutting edge services and resources with their clients to help them root out operational deficiencies and future proof their business models. “The strength of the underlying data is key. Even with all of the new technologies, it is crucial that there is strong, accurate data, which can be relied upon,” said Horsewill.



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