

# Securities Services:

Realising the promise  
of technology  
and innovation

# Foreword



The securities services industry has come a long way in developing its understanding of emerging financial technology ('fintech') in the past two to three years. While it has become apparent that the institutional space is not as vulnerable to potential insurgents as the retail financial services space, the challenge facing securities services providers is to collaborate effectively, leverage the power of digital technology or risk being left behind.

Fintech firms have proven that they can quickly develop new tools and platforms that offer value to clients in terms of speed, simplicity, mobility, transparency, cost and customisation. Banks that have adopted similar 'DevOps' techniques have reported a 25% efficiency improvement in developing application updates<sup>1</sup>. Fintechs' agility and single-minded focus enable them to quickly develop niche solutions that improve particular components of the value chain. However, would it make sense for securities services providers to compete with fintech firms head-on? It would appear not. Assuming that securities services providers could compete with fintech firms in this area, technical agility is not necessarily what their clients want. To win business from incumbents, custodians need to provide what their client base is seeking from them in the highly regulated environment they operate in, which include consistent and secure client service, a robust suite of products and solutions, risk warehousing

and credit support facilities, a reliable global operational infrastructure, regulatory and compliance support, and expertise encompassing in-country market knowledge and global reach.

Nevertheless, this does not mean that incumbent banks can relax. To meet rising expectations, they must make the most of the significant opportunities the latest fintech developments offer, and support clients' strategic business imperatives and operational efficiency objectives, at the same time meeting or exceeding clients' security and control expectations.

As such, forward-thinking custodians are working closely with selected fintech providers, pooling expertise and resources to generate and co-create new ways of adding value. Some initiatives, while widely discussed, will take considerable time, resources and effort to achieve sufficient robustness for implementation. The migration of existing processes from legacy infrastructures to Distributed Ledger Technology (DLT) – more widely called blockchain – is one example of technology that offers exciting possibilities but right now remains more of a promise than a reality.

Having said that, there are many other innovations being implemented today that offer short-term improvements in process efficiency and data management to the benefit of clients. These are being accelerated and enhanced by ongoing investments by securities services providers who are quickly grasping significant technology-enabled opportunities for competitive advantage.

In this paper, we explore some of the key initiatives being developed by custodians where we are expected to deliver value to clients in the near term.

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<sup>1</sup> "Leaner, Faster and Better with DevOps – Boston Consulting Group (March 2017)  
<https://www.bcg.com/publications/2017/technology-digital-leaner-faster-better-devops.aspx>

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# Streamlining custody; leveraging assets

Much of the impetus for enhancing custody services through fintech innovation stems from the evolving business needs of clients, driven both by regulatory change and competitive forces, which continually compress fees.

Central to the regulatory realities are tougher capital requirements and derivatives markets reforms. Basel III requires banks to leverage balance sheet assets more quickly and efficiently. In parallel, margin rules on non-cleared and cleared OTC derivatives<sup>2</sup> oblige both sell-side and buy-side firms to take a more comprehensive, proactive and flexible approach to identifying and posting collateral. The overall effect of these regulatory changes on sell-side and buy-side firms has been to increase the need for efficient transaction processing as well as real-time visibility and flexible access to assets, while budgets have been impacted by compliance costs and reduced yields.

Custodians are responding by leveraging technology innovation to bring new levels of automation and standardisation to core services. This means shortening processing times, reducing the number of links (and breaks) in transaction chains, and supporting asset optimisation and transparency through improved data flows, thus providing greater operational efficiency and strategic flexibility. In addition, technology has allowed custodians to innovate and to create new digitised products and services that streamline today's complex processes.



By digitising custody, there is scope for process simplification and acceleration, eliminating today's manually-supported hand-offs between service providers that currently add cost, error and delay. In the near term, clients can expect to see a stream of improvements to service quality – enhancing process timeliness and accuracy – as initiatives to optimise processes begin to yield returns. Process efficiency projects intersect with fintech's empowering impact on data flows: APIs and artificial intelligence (AI) are powerful tools for identifying and addressing the causes of exceptions and breaks.

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<sup>2</sup> Dodd-Frank Act, European Market Infrastructure Regulation, BCBS-IOSCO margin rules for non-cleared derivatives

## A combination of robotic process automation (RPA) and AI is already making significant strides in tackling long-standing sources of frustration in securities services.

### 'One-step' to better cut-off times

Securities services clients are often frustrated by delays between intermediaries in the transaction chain. However, technology innovation is already making incremental yet important practical improvements to the interaction between service providers, resulting in lowered costs and improved flexibility for clients. For example, an instruction sent by a client to its global custodian can automatically be delivered straight through to the sub-custodian in the local market, rather than being subjected to the traditional process involving two or more steps. Technology innovation is enabling process improvements such as the use of a single book of record, accessed by clients and service partners alike, which eliminates the delays and errors that arise from use of separate platforms. With this, Standard Chartered has eliminated a step in its internal processes, thereby offering clients better cut-off times.

### Handing manual processing to the robots

Back-offices processes are infamously difficult to transition to new, streamlined technologies, but great progress is now being made through RPA systems, which copy, automate and enhance repetitive processes. Custodians are working on projects to either develop fully automated solutions, or 'assisted automation' routines where human intervention cannot yet be eliminated. RPA projects include use of optical character recognition to read and act upon faxed instructions, automated funding checks on cash balances before implementing an instruction, and reconciliation of FX transactions. By continually identifying areas for improvement in these processes, custodians are reducing errors, risks, and delays, thus improving visibility of and access to client assets.

A combination of RPA and AI is already making significant strides in tackling long-standing sources of frustration in securities services. For example, in post-trade settlement, while the vast majority of transactions go straight through, a significant number still need costly and time-consuming manual fixes. Now, AI-based tools can serve as digital 'trouble-shooters', detecting the flaws that would require manual repairs or otherwise impact service quality, thereby enabling swift resolution. With AI, vast pools of complex data sets can be investigated to identify patterns and process gaps, providing valuable actionable information used to develop high-impact solutions. This helps custodians to redesign workflows and implement preventative measures to minimise if not eliminate common sources of breaks, thus streamlining flows and saving costs.



## Settling and safekeeping new asset classes

Looking slightly beyond early efficiency gains from fintech innovations, custodians – like their clients – are aware that, as one door closes, another opens. Macro-prudential reforms and monetary policy innovation have reduced yield and liquidity in some instruments such as bonds, for example, while creating opportunities in newer ones, such as private debt. The evolution of virtual currencies is also widening asset holdings and safekeeping needs still further. In this context, institutions look to their custodians to support accessing, monitoring and safekeeping of an ever-wider range of instruments.

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Institutional investor interest in cryptocurrencies is already growing (so is their number: now 1,300 and counting). While valuations topping US\$17,000 may have made the headlines in December 2017, a more pertinent data point is the US\$700 billion overall total value of the cryptocurrency market at the start of 2018<sup>3</sup>, since boosted by multiple initial coin offerings.

This gives rise to demand from institutional clients for similar kinds of settlement, safe-keeping, valuation and reporting services, which they rely on custodians for with respect to existing holdings. As noted recently by consulting group McKinsey<sup>4</sup>, “Securities services firms can play an important role as custodians for crypto-assets”. Anticipating growing demand, custodians are exploring the capabilities and partnerships needed to provide services in the cyber world.



## Tokenisation

As well as supporting investment in digital currencies, fintech innovation may also provide investors with new opportunities to generate value by digitising existing assets. Tokenisation, for example, potentially allows securities and fiat currencies to be divided, transferred and traded more efficiently. While previous initiatives to tokenise assets were weighed down by cost and complexity, digital tokens derived from underlying assets but traded on digital asset exchanges may succeed in reducing the steps in the transaction chain. This could help investors overcome current reservations and hurdles to making use of asset holdings to generate new sources of income.

The initiatives discussed in this section are examples of how securities services providers are adopting new technology to solve both existing and emerging challenges. Some of these innovations are already delivering value; others still require further research before bearing fruit. But they are all driven by a commitment to simplicity, transparency and reliability, thus bolstering investor confidence and market participation.

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<sup>3</sup> The global cryptocurrency market hit a new record high above \$700 billion, Business Insider UK, January 2018

<sup>4</sup> A Calm surface belies transformation in Securities Services - McKinsey, 2018



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# Rising to the data challenge

Information on asset holdings has always been at the heart of securities services, enabling institutions to monitor, assess and benchmark both risks and returns.

Complex transaction chains and diverse regulations across jurisdictions complicate efforts to deliver comprehensive, accurate and timely information. Manual intervention and multiple systems cause delay, error, risk and ultimately, cost. Increased regulatory scrutiny, intensifying competition and heightened client expectations demand these inefficiencies be addressed by data management frameworks that better support business goals.

Custodians have long been investing in both proprietary capabilities and industry initiatives to improve data flows. For example, the industry came together over a decade ago to support the use of ISO 20022 in order to ensure more data is carried throughout the transaction chain. But recent innovations – notably cloud, open APIs, AI and RPA – offer new opportunities to make significant leaps forward. Custodians are leveraging these technologies and partnering with other service providers to provide data to clients in a more immediate and customisable fashion, while also using data flows and analytics to improve their own service quality.

Blockchain may grab headlines through its potential to transform existing processes, but far-reaching change is already being delivered by the use of cloud and APIs to source, transfer and analyse data. A good example is the cloud which provides access to multiple managed services, enabling access to new tools and resources with fewer installation challenges. It also supports data interrogation and analysis at unprecedented scale and speed. Another example is the growing use of open APIs to facilitate streamlined flexible and customisable information flows between systems and counterparties. In combination, these technologies can provide easily digestible and actionable input into investment decisions and more strategic business decisions.



## Actionable insights

Financial services providers are cognisant of the increased value of data to their organisations – a recent study showed that financial institutions are prioritising updating legacy systems with a strong focus on data analytics<sup>5</sup>. The objectives are to develop actionable insights and deliver added-value services to their clients, and to improve their own processes and service quality.

Data also plays a significant part in providers' ability to respond to regulatory requirements. For example, Mifid II requires providers to be able to capture and analyse significant amounts of data throughout the lifecycle of a trade in order to monitor for market abuse and to provide key insights for best execution, among others<sup>6</sup>.

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<sup>5</sup> PWC Global Fintech Report 2017

<sup>6</sup> Five New Big Data Use Cases for 2018 – MiFID II, datameer.com, April 2018

## Pooling and analysing data to reduce errors, cut costs

APIs are addressing one of the biggest challenges and opportunities of the digital age: how to make optimal use of the vast and diverse pools of data now available to us. Going back to early last year, of the time spent on management information system (MIS) / analytics initiatives, around 60% was on getting the right data from various systems in an automated manner, understanding the right data element to use from a system and joining the right data elements across different platforms.

To reduce the time spent on these tasks the industry is using APIs and other means of data transfer to pool data from all systems containing client-related information into a data lake and formatting the raw data for analysis and reporting. Developing a data fabric creates a standardised and modelled data access layer to facilitate data consumption and optimise the delivery of reporting and analytics requirements. Potential use cases are many, but a core focus will be the identification of opportunities to reduce errors and delays, to cut service delivery costs.

Custodian banks sit on vast amounts of data – from internal transaction data, information on client holdings and counterparty relationships to market volumes and velocity. But the potential to draw actionable insights from data is not only limited to a custodian's internal data. When information sets from consolidated transaction data are combined with data from counterparties as well as market trends and developments, it can offer powerful insights that can be applied throughout the value chain, from tactical process improvements to strategic decision-making. Custodian banks that can bring data together from the different silos within their organisations and from their extended network will be in a position to provide valuable information to their clients.

## Automated market intelligence, but personalised human advice

Across the financial services industry, many banks are sending newsflashes and market profiles to clients to help them better navigate local markets. Enhancing market understanding lowers client enquiry volumes and allows banks to spend more time providing value-added support.

To further enhance the timeliness, usefulness and frequency of information, some institutions are looking at robotics and automated search capability. For example, Standard Chartered's tool automatically trawls relevant websites (e.g. financial regulators, stock exchanges and market infrastructures) for new information, extracting it for review and dissemination by analysts who can focus on advising clients on the impact of market changes. Further, the robotics tool learns dynamically, extracting only relevant content, thus increasing effectiveness.

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## The impact of APIs

The implementation of open banking and the use of APIs, spurred by regulatory mandate, is opening up new ways of sharing data across institutions, thus giving rise to new products and solutions.

More than 78% of banks and almost an equal number of FinTechs look to leverage APIs to improve the client experience they offer, according to the World Retail Banking Report 2017, and most said they believed APIs could significantly help generate new revenue streams<sup>7</sup>.

In a way, APIs are driving a democratisation of data, allowing access to information that was previously held in institutional strongholds. Even within single organisations, data was housed in silos by legacy systems built independently of each other. With the use of APIs, securities services providers are increasingly able to exchange information with clients and each other, in formats that are more easily consumable. For instance, rather than sending NAV reports and other data via formatted pdfs, custodians are using APIs to

make data available to clients at the time and in the format they require.

The benefits of APIs go both ways. First, they enable third party providers, such as fintech firms, to access data from custodian banks to enhance their niche offerings. In this case, the custodian becomes a data provider, enabling a fintech partner to develop a solution that in some cases, the custodian itself would leverage.

APIs also enable the securities services provider to incorporate information or solutions into its own value chain to enhance its own client offering. With fintech providers increasingly providing solutions that address individual pain points in the securities services value chain that incumbents could not focus on due to strategic resource allocations, APIs offer the industry an opportunity to improve service delivery swiftly and cost-effectively.

In many respects, the securities services industry is still in the early stages of exploring the potential of new technology to support client objectives. With many of the building blocks already in place, the benefits are being felt. As needs evolve and capabilities develop, we are well placed to respond quickly and efficiently.

### Placing data in clients' hands – on demand

Custodians are leveraging technology innovation to provide more timely, customised and easy-to-use information services to clients. Standard Chartered is using APIs to make its services more responsive and targeted to client needs, whilst also supporting communication flows with third-party service providers.

The first API available from its API store provides real-time response to transaction status requests, replacing end-of-day updates and thus driving process efficiency, improving asset visibility and optimisation. Upgrading from host-to-host information exchange to APIs also accelerates onboarding. Similarly, another API provides clients with asset holding data in real time, rather than end-of-day. The API can respond to requests or push data to clients, either at pre-set intervals or triggered by a change in asset values. As more APIs are rolled out, clients and partners will be able to access information at their convenience, allowing 'free play' on platforms to meet their individual needs. Clients will soon be able to find out the nature of a transaction error in real-time, potentially remedying it themselves, for example completing a missing data field.

The fruits of initiatives like the above are being made available via Standard Chartered's Straight2Bank next generation banking platform, which is customisable to individual client needs, while offering a consistent user experience across devices. Covering the full transaction banking suite of cash, trade and securities services, Straight2Bank provides reporting and analytics tools – some using data visualisation – to give clients full visibility over holdings, transactions and options for action. Often combining third-party data and capabilities to augment proprietary information and tools, the platform continually evolves with the aim of improving the range and quality of information available, to support decision making, cost reduction and investment performance.

## In summary

Technology has always played a critical role in the evolution of securities services, from streamlining and reducing risk from our processes, to creating new products and generating enhanced value from data.

Today, the task of leveraging technology effectively is magnified by the scale of the challenges facing the industry and the opportunities presented by the transformative potential of digital innovation. As observed by the World Economic Forum<sup>8</sup>, “Facing enormous pressure to reduce their cost base, incumbent financial institutions are embracing new technologies, as well as working with long-time competitors and new entrants alike, to commoditise cost drivers that do not provide competitive differentiation.” Clients and counterparties now expect custodians to:

- ✓ reduce fees, minimise breaks, and improve processing times
- ✓ deliver enriched, timely transaction data and actionable, tailored insights
- ✓ leverage existing assets quickly & transparently and provide safe access to new ones
- ✓ provide regulatory and compliance support and advice
- ✓ support their evolving business models through robust but flexible infrastructure

As the paper suggests, the current explosion of digital technology innovation has the potential to meet these needs. But firms in the securities services sector must step up: first informing and educating themselves about the role of fintech in their revised value proposition to clients, then developing strategies and identifying partners that will help them deliver that proposition.

While the securities services industry continues to invest in and deploy new digital innovations, we believe that fully supporting clients’ needs occurs where technology and people intersect. At Standard Chartered, we recognise the value of expertise, experience and human judgement empowered by, not replaced with, the right technology. With technology such as cloud, AI and APIs already in play, and a pipeline of promising technology such as DLT on the way, we see that the securities services business will continue to go from strength to strength.

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<sup>8</sup> Beyond Fintech: A Pragmatic Assessment Of Disruptive Potential In Financial Services - World Economic Forum, 2017



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