



**21<sup>st</sup> ISSA Symposium 10 – 12 May 2023 Wolfsberg**

**Account of proceedings by Dominic Hobson**

## ABOUT ISSA

ISSA is a Swiss-domiciled association that supports the securities services industry. ISSA's members include CSDs, custodians, technology companies and other firms who are actively involved in all aspects of the securities services value chain.

ISSA - Shaping the future of Securities Services.

## DISCLAIMER

The contents of this summary reflect the comments made by speakers and Symposium participants and do not represent the views of the ISSA itself and/or its member organisations.

© International Securities Services Association ISSA 2022

No part of this report may be reproduced, in whole or in part, without the prior permission from ISSA.

## Table of Contents

1	Speaker .....	3
1.1	Immediate challenges and opportunities .....	3
1.2	Big Tech: Cloud.....	8
2	Panels .....	9
2.1	Are emerging markets now leading the opportunities? .....	9
2.2	Securities services – the right people, the right environment, the right skills.....	10
2.3	Client view on securities services .....	12
3	Break-out Groups.....	13
3.1	Digital assets custody .....	13
3.2	Holistic and non-siloed risk management.....	16
3.3	Challenges of sanctions and geopolitics .....	17
3.4	ESG and securities services .....	19
3.5	Potential for mutualization.....	23
4	Retaining relevant in a changing world.....	27
5	The Work of ISSA .....	29
5.1	Suggested areas of focus for ISSA in the future .....	29
5.2	Current working group activities .....	30

## Table of Figures

Equation 1: Custody risk domains - traditional and digital assets .....	16
Equation 2: ESG transmission mechanisms from the real economy to the financial economy .....	21
Equation 3: The complex ESG eco-system .....	22
Equation 4: Striking the optimal balance between internal and external operations.....	25
Table 1 : Possible use-cases for mutualization.....	26

## 1 Speaker

### 1.1 Immediate challenges and opportunities

It is sometimes said that the global securities services industry has failed to change. This perception is quite wrong. In the last 30 years, global custody has transitioned successfully from paper to digitized data and from largely manual processes to mainly digitalized systems. The industry has attained scale; adapted to being regulated directly and - after the great financial crisis of 2007-08 – heavily; and since 2009 continued to generate substantial revenues despite chronically low rates of interest.

The era of quantitative easing and historically low rates of interest is now over. While this will boost earnings from net interest margin, it also means the industry may have to adapt to lower asset values, from which most of its growth has derived in the last 30 years. Higher interest rates have also shifted collateral preferences from cash (which is liquid and stable) to securities (which stay on the balance sheet). The consequent scramble for High Quality Liquid Assets (HQLAs) reflects the rising costs of regulatory balance sheet constraints on banks.

In addition to the challenges posed by the normalization of monetary policy, the global securities industry also faces the burgeoning reality of de-globalization. This is evident in the speed at which pharmaceuticals were captured by national political interests in the Pandemic; the persistent supply chain frictions in the aftermath of the Pandemic; and the intensification and complexity of the sanctions – which custodian banks must apply - imposed after the Russian invasion of Ukraine.

For an industry which grew to its present position by facilitating the flow of capital across national borders, de-globalization is rich in disruptive potential. However, disruption is an opportunity as well as a threat. Instability encourages reliance on trusted, well-capitalized intermediaries such as global custodian banks and national and international financial market infrastructures. The industry has already developed a “trust network” that attracts assets and reinforces compliance.

But even trust is insufficient to secure the industry from being disrupted by a series of other secular trends conspiring against its present shape and structure. The first is the intensifying search for value by clients. Today, they are seeking more than value for money for the fees they pay. Customised reporting is a given. What they really want is insights, derived from data, that enable them to make better decisions. Firms that meet that need will enjoy a significant competitive advantage.

New data management capabilities are being developed, such as the settlement prediction tools used to minimize the cost of fines – and, eventually, mandatory buy-ins - imposed on parties that fail to settle transactions under the Central Securities Depositories Regulation (CSDR) of the European Union (EU). The same prediction tools will help minimize the damage from the now-global trend towards settling trades to a trade date plus one day (T+1) timetable. But the principle, of shifting the client experience from what has happened to what will happen, is capable of wider application. Firms that rise to this challenge will trade at higher multiples.

Data, in digitized form, is also what makes digitalization initiatives possible, and especially those designed to apply artificial intelligence (AI). But digitalization has yet to transform the client experience. So far, the

industry has managed, in the same way that the music industry shifted from records to tapes to compact discs, to change the technology without altering the experience. It was *streaming* that transformed the customer experience. Something similar will happen in securities services.

In other words, securities services will be rented from platforms or on-line marketplaces rather than bought directly. Supply chains are likely to be truncated, bringing issuers closer to investors than the currently high levels of intermediation by banks, fund administrators and FMs allows. Real-world problems will be solved not by applying specific technologies to problems within firms but by gaining access to scalable, low-cost software-as-a-service provision via the cloud.

This transformation is beginning now because until recently securities services were protected from the full impact of digital technology by regulation. The industry is not dominated by a digital technology-based, networked platform business in the same way that, in Western markets, Amazon dominates retailing or Meta dominates social media because the ability to outgrow existing firms was blunted by the protective umbrella of national and regional regulation.

However, conditions are now ripening for one or more platform businesses to emerge in securities services. The industry is becoming steadily less diverse and more consolidated. Already the global bond market is dominated by a duopoly. The US treasury market is dominated by a single global custodian bank. Application Programme Interfaces (APIs) create the possibility of inter-operating networks controlled by a small number of dominant securities services businesses.

This trend will be accompanied by reduced customer loyalty, as it is easier to change providers in a networked, cloud-based industry in which services are “streamed” in the same way as music or video content. This increased mobility is already evident in recent bank runs, where the withdrawal of deposits was accelerated by digital technology. The switch from active to passive investing, and the willingness to look to alternatives to increase yields, are also eroding buy-side loyalty to the status quo.

More customers are applying non-financial Environmental, Social and Governance (ESG) criteria to investment decisions too. Rather than rely at the post-trade level on the same poor-quality data used by portfolio managers to select investments at the pre-trade level, which has led to accusations of “greenwashing” by asset managers, the securities services industry should concentrate its efforts where it is uniquely placed to help – in areas such as coding ESG attributes into securities at the point of issue and maintaining them throughout their lifecycle.

ESG is a good instance of where the global securities services industry can enhance its reputation for providing trustworthy intermediation but is currently at risk of forfeiting it by failing to think through where it can best contribute. Digital assets are another area where trusted intermediaries are required if investment and trading is to flourish. But in that instance the challenge is not insufficient consideration by the industry but the unintended consequences of actions taken by regulators.

The concentration of Stablecoin deposits at a relatively small group of banks - Silicon Valley Bank, Silvergate Bank and Signature Bank - which failed in the spring of 2023 was a consequence of the combination of an unregulated cryptocurrency industry deterring established banks from taking the deposits, loose monetary policies and a regulatory bias to holding low risk-weighted assets such as treasury bonds. Ultimately, the banks failed because of the perverse effects of regulatory measures.

Similarly, although there is a clear opportunity for the securities services industry in digital asset custody, especially as the security and fund token markets develop alongside the cryptocurrency markets, regulators are raising the cost of seizing it. In particular, the “Safeguarding Rule” amendment proposed by the Securities and Exchange Commission risks making custody of digital assets unattractive as a business and undermining the relationship between global and sub-custodian banks.<sup>1</sup>

---

<sup>1</sup> The new “Safeguarding Rule” introduced by a proposed amendment to the “Custody Rule” (Rule 206(4)-2 under the Investment Advisers Act of 1940) aims to close exemptions for privately offered securities from the longstanding obligation laid on asset managers in the United States to appoint a qualified custodian; check the custodian is sending regular reports on assets in custody to investors; and appoint an accountant to verify assets are in the custody account. The new rule would oblige custodians to reach written agreements with asset managers (rather than, in line with common practice, investors); ensure client assets are segregated from proprietary assets; indemnify investors against loss; and control any changes of ownership of client assets.

At present, regulations are being developed with insufficient industry input. This matters intensely, because the major economies need strong economic growth to overcome a series of problems and well-functioning capital markets are essential to get the investment that drives growth. The purpose of the global securities services industry is to support the movement of capital from the yield-hungry to the capital-hungry, and some ill-considered regulations are undermining the fulfilment of that role.

Regulation is an area where it makes obvious sense for the industry to collaborate, to secure regulatory outcomes that are not perverse. But all the major trends affecting global securities services – digitization of data, digitalization of processes, higher customer expectations, declining customer loyalty and the likely emergence of inter-operating, cloud-based, networked platforms that bring together the buy- and sell-sides - argue for its members to navigate the process of change together.

#### Emerging technology for leaders

Financial data analysed by Accenture shows that technology can transform revenue growth. Between 2015 and 2018 corporate “technology leaders” grew revenue more than twice as fast (9.11 per cent per annum) as “technology laggards” (4.24 per cent). Although the rate of growth of “technology leaders” has slowed since the Pandemic (to 3.98 per cent since 2019) the gap with the laggards (0.8 per cent) has grown even wider: technology “leaders” are now growing five times as fast as “laggards.”

Where “leaders” differentiate themselves from “laggards” is by investing more in technologies such as cloud and AI; hiring experienced people; training staff; working with technology partners; and not just capturing and storing data but maintaining data sovereignty and privacy. “Leaders” are also culturally different. They are willing to experiment and fail, and adjust constantly, whereas “laggards” get trapped in workshops for months trying to identify exactly what to do.

Cloud is a crucial investment because it enables firms not just to absorb external changes but to respond quickly to their impact. Indeed, cloud is the foundation of all other digital capabilities because it is cost-effective, scalable and reliable but also flexible. It provides the agility to innovate rapidly, while providing management with the assurance that disaster recovery, business continuity and cyber-security obligations will be met.

Functionality that covers the whole of the securities services value chain - from order capture, position reporting and cash management, through settlement and clearing to asset servicing and fees and billing – can be built in the cloud and integrated easily and securely. Understandably, securities services firms are more cautious about moving regulatory compliance to the cloud, not least because regulators are now treating cloud itself as a target for regulatory monitoring.

However, there is growing recognition within the securities services industry that compliance obligations such as transaction monitoring, regulatory reporting, identity management and customer on-boarding and risk management and control can be handled more efficiently and accurately by digital technology. In fact, “RegTech” can not only help firms remain compliant, even as regulatory obligations evolve, but improve the customer experience in area such as on-boarding.

Accordingly, investing in RegTech is a relatively straightforward business decision. By contrast, a decision to replace the centralized databases of today with distributed ledger technology (DLT), and especially with the types of distributed ledger offered by blockchain protocols, is harder to reach. The generic benefits (transparency, security, and efficiency through decentralized, immutable, and tamper-proof records) are well-understood, but their application to securities services is a work-in-progress.

Real-time settlement on DLT is possible, as numerous experiments have proved. The benefits include immutable, transparent records, round-the-clock settlement and full automation with smart contracts. But blockchain technology is also complex, hard to implement in terms of speed and scalability, of uncertain regulatory status and not noticeably superior to established alternatives. The case for it is also uncertain, as many central securities depositories (CSDs) achieve instant settlement already.

Custody and servicing of digital assets issued on to blockchain networks, on the other hand, do represent a nascent new industry for securities services to support. The stocks of unlisted companies, private equity and hedge funds are already being tokenized, and leading global custodian banks are developing digital asset custody services. The cash leg of tokenized asset transactions is supported by spot exchanges of fiat currency and cryptocurrencies or Stablecoins. Digital assets are an opportunity.

In fact, digital assets could prove a segue to an institutional version of Decentralized Finance (DeFi), a blockchain and smart contract-enabled method of providing financial services such as trading, lending and investing on a peer-to-peer basis un-intermediated by traditional institutions such as banks and CSDs. Being unregulated, and with most applications built on the public Ethereum blockchain, current iterations of DeFi present regulated firms with complex technology, product and liquidity risks.

However, there is growing interest among regulators as well as regulated banks in adapting DeFi techniques, such as smart contracts, tokenisation of real-world assets, digital identity and automated market-makers (AMMs) to mainstream financial assets. The challenge is to build the same levels of investor protection, regulatory compliance, customer due diligence, access control, cyber-security and technical inter-operability standards into DeFi protocols as apply to mainstream financial assets today.

Another opportunity lies in zero knowledge proofs (ZKPs). ZKPs are popular in blockchain applications because, by enabling one party to prove to another that they know a certain piece of information without actually revealing the information itself, they offer privacy and security to transactions. They can be used to verify parties to token transactions on blockchain networks. Another potential application is at on-boarding, where ZKPs can be used to prove digital identities.

But immediate excitement in the securities services industry revolves around the potential of AI and machine learning (ML) to automate post-trade processes. This is partly because generative AI tools such as ChatGPT and DALL-E 2 can be used easily to create new written, audio, video and statistical content. It points to a “hyper-automated” future in which operations are entirely controlled by AI and ML. It lies beyond the mere automation of tasks and processes by Robotic Process Automation (RPA).

For now, however, RPA remains the commonest form of automation in securities services. It can cut costs by eliminating human errors through pre-programmed, if-this-then-that rules that automate repetitive processes. Although “low-code” or “no-code” RPA is relatively easy to implement because users can drag and drop components rather than rely on coders, RPA remains difficult to integrate with existing systems and can lack access to data in the structured formats needed to process it.

AI can tackle a wider range of more complex and less repetitive tasks, including fraud detection, risk management, regulatory reporting and even aspects of customer service and asset management. In reality, the ability of a machine to perform a function depends not on AI software but ML, where algorithms are trained on data sets. That training can take a variety of forms, ranging from being unsupervised by any human at all to being fully supervised by an expert.

Completely *unsupervised* learning, in which an AI machine searches large data sets for patterns, tends to produce limited results. But *supervised* learning, in which a human expert selects and labels the data from which the algorithm learns and provides feedback, is slow and expensive. It is *semi-supervised* learning, in which learnings from small data sets are applied to large ones, that tends to lead to faster, cheaper and better results.

A variant of supervised learning known as *reinforced learning*, which enables AI machines to learn by trial and error which actions to take, is achieving good results. Unlike supervised learning, where the machine is told the correct action to take by a human expert, in reinforced learning the machine uses algorithmic techniques such as the Monte Carlo and state–action–reward–state–action (SARSA) methods, to identify the right course of action.

Generative AI (such as Chat-GPT) is a form of statistical computation that uses Large Language Models (LLMs) to consume digitized information such as web pages, books and source code, and interactions with humans, to learn how to predict the next word or symbol in a sequence, based on the context. Existing technologies such as automated answering systems, cloud-based voice services such as Alexa and SIRI, device management services such as Google Home and dictation software, use LLMs.

LLMs are available from various organizations (including Google, OpenAI, Facebook and Microsoft) through browsers or APIs. They rely on “prompt engineering,” in which the task set is embedded in the question, to guide the LLM to the right answer by imposing constraints and setting clear objectives. They nevertheless suffer from “hallucinations,” or a tendency to proffer plausible answers that are unrealistic or inaccurate. It is hard to use LLMs with proprietary data.

Although the results produced by generative AI often impress users, the technique suffers from a number of shortcomings. The most obvious are uncertainties about the veracity of the output, creating ethical dilemmas about the spread of misinformation, and whether the outputs breach copyright law. Results can incorporate embarrassing biases, which might be cultural or racial as well as political. Machines can also breach data privacy protections.

Nevertheless, generative AI remains an exciting prospect for securities services, not least because it is able to combine structured and unstructured data so easily and quickly. A lot of industry data is available in structured formats (such as SWIFT and FIX messages) but an even larger pool of data (such as laws and regulations or corporate action notifications) are in unstructured formats. Generative AI could, for example, combine a client position with the associated compliance obligations.

But the truly transformative technology is not generative AI. It is quantum computing. Like classical computers, quantum computers use a binary code of ones and zeros (bits) to represent information but the “qubits” they use to calculate have a third state called “superposition” that allows them to represent a one and a zero at the same time. This massively reduces the time required to complete a calculation. That power increases not in a one-to-one relationship with the number of transistors on a microchip but exponentially in proportion to the number of qubits.

Fears that this exponential power will break existing data encryption are true (the industry standard RSA algorithm relies on prime numbers and Peter Shor has written a quantum computer algorithm for finding the prime factors of an integer) but distant (it would take a million qubits and the largest quantum computer built so far has just 433).<sup>2</sup> In the meantime, a quantum computer could accelerate ML, and reduce the time required to solve problems in asset and risk management.

Although companies and governments have made technical progress in quantum computing, efforts to build and programme quantum computers still face engineering obstacles. They are sensitive to noise and errors caused by interactions with their environment; lack reliable error correction techniques; have yet to settle their hardware and software components; are hard to scale; difficult to connect to conventional computers; need to be kept ultra-cold; and are expensive to develop.

Quantum computing is nevertheless one of the five technology trends – the others are **cloud**, RegTech, Blockchain and DLT and Hyper Automation – that the leaders of the securities services industry must understand, monitor and eventually address. The benefits these technologies offer include faster and more efficient post-trade processing; lower technology and operations costs; improvements to the customer experience; and faster growth and increased profitability.

---

<sup>2</sup> See DTCC, *Post-Quantum Security Considerations for The Financial Industry: A White Paper to the Industry*, September 2022.



To secure them, three steps are necessary. The first is to find and recruit the necessary experts. The second is to obtain budgets to invest, accepting that each technology will impose its own budgetary peculiarities. The third is to avoid trying to transform the entire securities processing platform. Instead, invest only in small projects to solve specific challenges that deliver concrete benefits for the firm and its clients, and supervise them directly. Further change depends on iterating from an initial success.

## 1.2 Big Tech: Cloud

Incumbent financial services are embracing digital transformation because they believe current technology trends threaten the survival of their businesses over the next five to ten years. Cloud computing - where concerns about lack of control, inadvertent but potentially expensive compliance breaches and cyber-security have largely disappeared as both regulators and the military have embraced the cloud - has become a core component of adaptation strategies.

Cloud use is certainly growing in the securities industry. Several financial market infrastructures - CME Group, London Stock Exchange Group (LSEG), Deutsche Börse and Nasdaq – data vendors, banks investment banks and hedge funds have formed partnerships with cloud providers, as a faster and more efficient way to obtain and analyse data, deliver data - including price data- and distribute data analytics products than current data silos and legacy systems can manage.

The attractions in terms of commercial economics are familiar. By enabling businesses to access computing power, data storage, networking, applications and services on-demand with pay-as-you-go pricing, cloud obviates the need for proprietary data centres. These savings stem mainly from scalable computing, in which technology managers dispense with proprietary data centres and rely on cloud providers to deliver whatever infrastructure they need when they need it.

In essence, the cloud gives businesses immediate capital and operating cost savings; rapid access to increases and decreases in capacity if business volume grows faster or slower than expected; much-reduced downtime, which improves client perceptions; and access to new capabilities. As a transformation, it is akin to nineteenth century cotton factories switching from locally generated steam power to remotely generated electricity: the requisite capacity can simply be switched on and off.

Unlike electricity, cloud is not a general-purpose technology, but it shares some of the characteristics of a general-purpose technology because it makes access to other powerful digital technologies, such as AI and ML and blockchain, so convenient. It is already helping financial institutions settle tokenized trades on blockchain networks and build and sustain a presence in the Metaverse. One day it will probably help firms make use of quantum computing as well.

A major cloud provider claims its average client saves 27.4 per cent in technology infrastructure spending; improves productivity by increasing the number of virtual machines and the number of terabytes of data a single manager can supervise by 57.9 per cent and 67.7 per cent, respectively; enhances resilience by reducing downtime by 56.7 per cent; and cuts time-to-market for new applications by 37.1 per cent.<sup>3</sup>

In making it easier to adopt new digital technologies, the cloud has cultural effects within organizations too. Decisions to build a tokenization engine or a presence in the Metaverse, for example, become less onerous. Employees also like working with new technologies, not simply because they save time and broaden the range of experiments they can run and tasks they can fulfil, but because new technologies help the entire firm become more digitally native.

Digitally native capabilities facilitated by the cloud include chatbots (which use AI and natural language processing (NLP) to understand questions and formulate responses) that broaden the range of digital customer communication channels available. Cloud-based applications also enable firms to segment customers and engage with them digitally, using personalised messages, across email, text, voice and proprietary channels.

---

<sup>3</sup> See also Rob Palatnick, Chief Technology Architect, DTCC, at [https://www.youtube.com/watch?v=Yf2la\\_pAqeo](https://www.youtube.com/watch?v=Yf2la_pAqeo)

But the biggest benefit of AI and ML in the cloud is the ability to comprehend large quantities of digitized data. In the securities services industry, this combination is already facilitating the on-boarding of customers; improving the efficiency of call centres with automated transcriptions; making it easier to extract data from regulatory reports; enabling investment products to be personalized; identifying AGMs likely to be contentious; and predicting debt defaults and settlement failures.

There is now a proven methodology for making a success of a cloud migration programme. It is to conduct a thorough technical review of the existing data and system architecture; ensure internal compliance concerns, such as cyber-security and data privacy and control, are addressed; run a Proof of Concept (PoC) or pilot programme; and identify and select partners, such as data analytics or database technology vendors, that can make the transition to the cloud easier and more rewarding.

## 2 Panels

### 2.1 Are emerging markets now leading the opportunities?

The capital markets of China, India, Mexico and Nigeria are not rightly described as “emerging” anymore. All four are making efforts to attract foreign portfolio investors, albeit within the constraints of currencies that are not fully convertible and quantitative limits set by national governments, which vary by both the type of investor and the type of stock. All four markets have also seen considerable volatility in foreign capital inflows in recent years.

This means securities services matter. In Mexico, for example, 70 per cent of the volume traded in local securities is now derived from US securities, so the efficiency of the supporting infrastructure of sub-custodians and global custodians communicating via SWIFT messages is paramount. In China, a similar concern to make investment convenient for the buy-side has played a large part in the development of the Stock Connect services between the Hong Kong, Shanghai and Shenzhen exchanges since 2014.

Stock Connect also highlighted an infrastructural obstacle to foreign portfolio investment. The trade date (T+0) settlement cycle in China required firms to settle within hours of execution even if they were based many time-zones away. This was addressed by a collaborative blockchain solution created by Hong Kong Exchanges and Clearing Limited and the Depository Trust & Clearing Corporation (DTCC).

Different settlement timetables signify that newer markets are less constrained by legacy systems and processes. For example, the Nigerian market is capable of settling transactions on T+0 but finds that intermediaries based in developed markets are not yet ready for it. India currently works to a trade date plus one day (T+1) settlement schedule, which is the timetable the Securities and Exchange Commission (SEC) expects the United States (US) to meet by 28 May 2024. So alignment is possible.

But achieving alignment will require much greater investment in established markets than in newer markets whose infrastructure is built on later technology. In India, for example, where the digitization of investing has proceeded rapidly, on-line stockbrokers have displaced physical stockbrokers, the holders of the “demat” accounts in which their securities are held can issue buy and sell instructions entirely on-line, and investors can attend and also vote at company meetings using the Internet.

All four markets are ahead of longer established stock markets in addressing a major challenge set by cryptocurrency and DeFi: the “democratisation” of finance, especially among younger people. China now has an estimated 205 million retail investors. In Nigeria, the CSD operates 70 million beneficial owner accounts. In India, the Central Depository Services Limited (CDSL) depository alone now has more than 80 million beneficial owner accounts. There is ample room for growth, since even adding the more than 32 million accounts at the National Securities Depository Limited (NSDL) means only 8 per cent of the population of India are engaged so far.

While digital technology has proved vital in attracting retail investors, it also creates challenges. In Mexico, younger investors prefer to access the market on their smartphones, but it creates a culture that treats stocks as a form of speculation. China and India have experienced a similar phenomenon. In Nigeria, cryptocurrency trading is popular, despite government efforts to suppress it. In the long term, trusted institutional intermediaries and dispassionate advice will be required.

Ultimately, the persistence of the inbound trend in capital inflows - it is uniform across all four markets since 2020 - will be enabled by actions that make a new market a more attractive investment proposition, ease access for foreign portfolio investors or boost domestic market liquidity by attracting retail investors. However, it is macro-economic and geopolitical developments that retain the most substantial influence over the direction as well as the scale of capital flows across national borders.

## **2.2 Securities services – the right people, the right environment, the right skills**

Securities services are delivered by a combination of technology, processes and people – and it is the people which are the differentiating factor within as well as between service providers. The ability of the industry to attract and retain talented people depends not just on how much they are paid but on the culture in which they work, which is based on providing an environment in which they feel fulfilled and can flourish, and in which they can grow by acquiring new knowledge and skills.

Securities services firms compete for talent, initially at the entry level, with each other and with other financial services firms, technology companies, accounting firms and consultants. This competition is also global. One technology vendor enables individuals based anywhere to take its entry test. This widens the talent pool, but also intensifies the competition at the local level, where talented people are given the opportunity to move to major financial centres.

The expectations of modern graduates and school-leavers are also different from those of previous generations. When the current leadership of the industry began their careers 30 or 40 years ago, they accepted the salary empowered the employer to dictate what they did, how long they did it, and where they worked. Today, employers have to sell an “employee value proposition” itemising what the company will provide in return for the capabilities and experience the employees will bring to them.

Even the youngest potential recruits do not hesitate to ask in interviews about when, where and how they will work, and especially whether they can work from home some or all the time. Interviewees are also interested in the values of the company as well as the salary, asking about sustainability policies and the social and economic “impact” or “outcome” of their work. In other words, they expect a salaried job not just to support their lifestyle, but to change the world.

But competition for talent at the entry level is only one challenge facing the industry. In such a competitive marketplace, retaining talented and experienced people is also more difficult than it was in the past. It might take five years of higher education and ten years’ practical experience to fully understand how a process works and could be changed, and how the various parts of a company work together, so retaining people with 25-30 years’ experience is vital to success.

This is becoming more difficult. A recent survey of people aged over 50 who left the workforce found that 53 per cent preferred to retire while 47 per cent left because they felt tired and under-valued. Which implies that nearly half of older workers are not “having a good day at work.” The survey found that most of the early leavers rejected the idea of returning to work full-time and would not even consider it without the flexibility to work at home and at odd hours.

An interesting parallel is the loss of experience consequent on outsourcing and offshoring. Regulators have flagged this as a concern when imposing operational resilience obligations. As a result, employers are moving away from hard-stop retirements and reducing contracted hours. They are also allowing upcoming retirees to develop other interests. These measures ensure the company does not lose the tacit knowledge and institutional memory of experienced employees immediately.

A major factor in this high level of dissatisfaction is malfunctioning hierarchy. Chief among the negative reasons people leave companies is the behaviour of their immediate superiors, not the executive management at the highest level. One solution is to survey employees on their line managers, to identify bad leaders and talk to them about how they can either do less damage or improve. Where it is tried it has changed way managers behave because they know they are being scored by employees.

Another measure designed to increase employee satisfaction and retention is the introduction of “agile working,” in which hierarchy is replaced by the concept of “teams” of employees draw from different parts of the business to complete specific tasks. In “agile working,” employees are also given the freedom to work from wherever they like and trusted sufficiently to be judged by performance and results rather than time spent in the office.

“Agile working” has proved successful in breaking down barriers between functions within the same organizations, particularly where the “teams” are relatively small, the goals are clear and there is sufficient support to complete a task. Collapsing boundaries also broadens the knowledge of participants, by releasing employees from an excessive specialization that inhibits end-to-end understanding of a process and how different specialisms meet the needs of the client.

However, securities services firms have struggled with “agile working” by comparison with technology companies. Senior managers retain a hierarchical “waterfall mentality.” Many remain reluctant to empower subordinates or tolerate failure or accept that rewards can be tied to specific outcomes. Projects tend to proceed so fast they threaten to disrupt the status quo, forfeiting internal support, or advance so slowly that they achieve nothing. Which proves that cultures are hard to change.

But change they must, if the securities services industry is to keep pace with the changing nature of human capital as well as digital technology. One way to approach the challenge is to move from a Know-It-All Culture to a humbler Learn-It-All-Culture or, more prosaically, from mastering every SWIFT message type to a developing a digital mindset. This cannot be achieved if employees are familiar with the culture of one company only.

The obvious way to address the challenge is to train, re-train and upskill existing employees. At technology firms, employees are told that their skills will become redundant if they do not learn new skills, and those that refuse to upgrade are interviewed not just to establish why but to warn them. But upskilling existing staff is both expensive and time-consuming, which means its impact on the company takes too long to be felt in a rapidly mutating external environment.

A quicker solution is to recruit people from outside the industry, who naturally think outside the constraints of the securities services industry. Another is to embed independent consultants within the firm, though consultants can start to identify not with their employer but with the firm where they are posted. This is a problem technology firms have wrestled with, especially when a project runs for a number of years. Consultants risk assimilation to the host company culture and modus operandi and so fail to generate the necessary cultural challenge.

Changing a culture requires a balance between loyalty to the organization and openness to external ideas. If the number of outsiders is not limited, there is a risk of a complete cultural breakdown, as opposed to a positive cultural change. Accordingly, it is safer to find ways of ensuring employees retain their curiosity, acquire a continuous learning mentality and develop a willingness to reinvent themselves rather than wait to be reinvented.

They can be encouraged to do this by putting them in unfamiliar roles. Appointing women to run technology in an emerging market, for example, surprises other members of the workforce as well as the particular employee, and so reinforces an appetite for change. Another technique is to run internal educational programmes, in which outside experts are invited to address employees in areas such as ESG issues or tokenized assets.

But potentially the most effective is to tolerate mobility within the industry. This is both counter-intuitive and rarely a matter of choice – capable people will always be poached by competitors – but it is a mistake not to recognize that there are benefits if employees have worked at other firms. Exposure to other corporate cultures means people have experienced other ways of working and communicating, which refreshes cultures which might otherwise grow stale.

As it happens, the Pandemic and its aftermath have put existing cultures to a difficult test anyway. Though many companies switched to flexible working and casual dress many years ago, the experience of working from home for such prolonged periods has changed attitudes to work and especially the office. Firms are investing in remote connectivity technology and reconfiguring their estate and refurbishing space to take account of the increase in flexible and hybrid working.

Line managers now have the discretion to structure their workforce the way they want, with some employees coming to the office five days a week, some one or two days a week, some once a month and some barely at all. Though these patterns have to be reviewed regularly to ensure they are working, they are being written into employment contracts. Though there is resistance in some quarters, post-Pandemic practices are hardening into a new norm.

Provided companies do not regress *en masse* and insist employees go back to being in the office five days a week, remote working might prove to be the most powerful agent of cultural change of all. It widens the talent pool on a global scale, engenders a culture that is capable of accommodating lone thinkers as well as team-players, makes hierarchies less capable of exerting a malign influence and turns “agile working” into a daily reality.

### **2.3 Client view on securities services**

The basic mission of the securities services industry is to provide the operational infrastructure that enables capital to move from investors to issuers. Naturally, there is a continuous tension between providing a service that is robust and one that is efficient and innovative. For clients, the securities services industry often gets the balance wrong, focusing on innovative solutions for the future at the expense of providing basic services to a high standard across all asset classes and jurisdictions.

A classic instance of valuing future solutions over present problems is the plethora of data communication standards. Institutional clients find some of their providers unable to support the full range of SWIFT messages, necessitating the use of unstructured emails as well. APIs have proliferated too but are not standardised at all. One institutional investor using multiple service providers is using three different APIs for account openings alone.

In the wake of the Dodd Frank Act of 2010 and the European Market Infrastructure Regulation (EMIR) of 2012, global custodians were unable to support the OTC derivative reporting obligations – to trade repositories - of buy-side clients. Though levels of automation have improved now, most OTC derivatives are traded on swap execution facilities (SEFs), margin payments are still being collected not by structured messages but by using emails containing account details.

One of the longest running sources of friction between the sell-side and the buy-side in securities services is outdated reference data – standing settlement instructions, bank, broker, instrument and exchange identifiers and dynamic data, such as record dates and corporate actions – and it remains an issue today. So is variation in settlement timetables around the world, which is a much bigger problem for buy-side institutions than the current pressure to shorten settlement timetables.

Custodians counter that they too would benefit from greater standardization of market infrastructure interfaces and settlement timetables and insist that the persistence of manual or unstructured methods often reflects buy-side reluctance to change systems that work well for them. Another source of conservatism in this area is that sub-custodians insulate global custodians from frictions at the local level, such as paper documentation, beneficial owner disclosure and the need for physical signatures.

One answer to this disjunction is education, in the sense of regular briefings by securities services firms for buy-side clients about points of friction and their efforts to solve them. Education can also help buy-side institutions understand better how sub-custodian networks are operated and managed, in terms of initial due diligence and subsequent risk management. At present, the buy-side has a poor understanding of the risks sub-custodians and local CSDs represent to their assets.

Buy-side institutions are also disappointed by the limited engagement of the securities services industry with their efforts to improve operational resilience, not least because it is an area where asset managers are under regulatory pressure. Institutions have analysed the critical applications in their own business, the systems they use and the data they need to function, and the locations, key people, back-up plans and maximum tolerable outage times of key external service providers.

Yet service providers have not engaged in sufficient reciprocal work. When the Pandemic began in 2020, for example, and the Ukraine war broke out in 2022, neither custodian banks nor CSDs were in touch with clients with coherent explanations of how staff working from home or the imposition of sanctions on Russia would affect their day-to-day services. Clients of the securities services industry would value timely advice on what to expect in terms of service quality when crises occur.

The growing appetite of investors for ESG mandates is a new area where the industry could help. Buy-side firms are enriching their own databases with ESG data, and custodians could facilitate this work by adding ESG data to reference data. It is in their own interests to do so because environmental impact is now a standard question in custodial Requests for Proposals (RFPs). Accurate ESG data would have a positive impact, while flying a large sales team to make a sales pitch would have a negative impact.

Buy-side firms do expect tokenization of assets to affect their behaviour but initially in privately managed assets such as real estate rather than publicly listed securities. This is because clearance and settlement (if not issuance and asset servicing) are already efficient in public markets. CSDs are also extending existing infrastructure and operational techniques to include digital assets (tokenized bonds issued into the Swiss digital or conventional CSD, for example, can be settled using SWIFT messages).

However, there is a danger that tokenization of privately managed assets, where there is a need for new infrastructure to automate paper-based, manual processes and capture the benefits of innovations such as fractionalization, will be mishandled. Multiple initiatives are aimed at the opportunity, inhibiting scale and risking fragmentation into dozens of closed systems unless inter-operability is improved. Custodians and CSDs should collaborate to avert that possibility.

### **3 Break-out Groups**

#### **3.1 Digital assets custody**

Established businesses always under-estimate the long-run impact of new technologies. Digital assets issued, traded, settled and safekept on blockchain networks might be just such a technology. They may even be part of a much wider structural shift in the nature of the Internet from centralized intermediation (Web 2.0) to peer-to-peer interaction without intermediation (Web 3.0).<sup>4</sup> If the Internet is changing, it will change all businesses, including the securities services industry.

Events in the cryptocurrency markets appear to argue against this. Cryptocurrencies were already tumbling when the March 2022 failure of the Terra/LUNA algorithmic Stablecoin undermined asset-backed Stablecoins, triggered a loss of value locked in DeFi protocols, prompted the bankruptcy of cryptocurrency asset managers and lenders, and led eventually to the collapse in November 2022 of the cryptocurrency exchange FTX and the indictment of its founder on charges that include fraud.

---

<sup>4</sup> See in section 3.6 below.

In fact, these events argue for action, not inaction, by the securities services industry. “Custody” clients of FTX found they had to compete to retrieve their assets with unsecured creditors of the failed firm. Why? Because FTX combined custody with trading and did not segregate client and proprietary assets. Most cryptocurrency exchanges operate the same way. Which is why the crisis in the cryptocurrency markets is an opportunity for the securities services industry to exploit its innovations.

Those innovations include tokenized real-world and “native” assets, fully digital forms of money such as Stablecoins, tokenized deposits and central bank digital currencies (CBDCs), smart contracts and programmability. These are being exploited already by traditional service providers in exchanges (SDX and TDX), securities finance (HQLAx), CSDs (Project Whitney at the DTCC), banking (tokenized deposits issued by J.P. Morgan, NAB and ANZ) and by central banks (Bahamas, Eastern Caribbean, Nigeria).

For the securities services industry, the opportunity is to combine the hard-won lessons of traditional custodial services with the benefits of blockchain technology. In essence, it is to provide segregated, bankruptcy-remote digital asset custody services to institutional asset managers and institutional end-investors interested in investing in tokenized assets. The service must also be provided in a regulated environment capable of maintaining financial stability and protecting investors from criminal activity.

The services can include cryptocurrencies, although the value of the cryptocurrency markets now is less than half their US\$2.9 trillion peak in November 2021, not least because they continue to be plagued by financial crime. According to the annual review by Chainalysis, illicit transaction volumes in cryptocurrency markets rose to an all-time high in 2022 of US\$20.6 billion.<sup>5</sup> But the main opportunity is to provide safe custody for institutions not in cryptocurrency but in tokenized assets.

According to a survey conducted on behalf of BNY Mellon in 2022, 97 per cent of asset managers and end-investors agreed that “tokenization will revolutionize asset management” and be “good for the industry,” and 91 per cent expressed interest in investing in tokenized products.<sup>6</sup> In other words, the buy-side clients of the securities services industry already expect their service providers to make it possible for them to invest in tokenized assets.

Further encouragement for the industry to invest in digital asset tokenization and custody services stems from Stablecoins and tokenized deposits being brought within the regulatory perimeter in all major financial jurisdictions, and central banks continuing to work on CBDCs. These instruments can accelerate tokenization by solving the cash leg of the settlement of transactions in tokenized assets issued on to blockchain networks.

The range of assets open to tokenization is wide. It includes privately managed equity and debt, real estate, infrastructure, commodities, carbon credits, royalties and alternatives such as fine art and wine. There is an opportunity for custodians and CSDs to help investors to custody tokenized cash (including CBDCs) as well as use it to settle transactions - and even to increase financial inclusion by servicing institutions which interact directly with retail investors.<sup>7</sup>

In the case of both native and non-native security tokens, on the other hand, custody entails more than keeping an asset safely and making it available when needed. The assets have to be serviced, in terms of paying and collecting entitlements such as dividends, interest and rights. It is usually assumed that these duties are performed by pre-programmed smart contracts, making the role of the custodian and the CSD redundant. In reality, it is an opportunity for the securities services industry.

---

<sup>5</sup> Chainalysis, *The 2023 Crypto Crime Report*, February 2023, page 5.

<sup>6</sup> BNY Mellon, *Institutional Investing 2.0, Migration to Digital Assets Accelerates*, Key Findings from Celent’s 2022 Survey of Global Institutional Asset Managers, Asset Owners, and Hedge Funds, October 2022, page 9.

<sup>7</sup> Self-custody wallet services, in which digital cash is not a liability of a bank, would be unattractive for banks to provide without charging a substantial fee. That would diminish the value of digital money as cash.

In one sense, the opportunity is obvious. Custodians and CSDs are regulated already. Investors use regulated custodians and CSDs to protect their assets and will expect the same level of protection with digital assets that they currently enjoy with traditional assets. Of course, the risk profiles of cryptocurrencies, “native” and “non-native” digital assets vary, and must be understood, but in general digital asset custodians will get paid for covering the risk of loss by institutional investors.

That implies that regulated digital asset custodians will be willing not only to assume the liability for loss but will actually possess the means, in terms of capital, to make investors whole. Institutional investors also want segregation of client assets. They want to trade tokenized assets alongside non-tokenized assets and expect the securities services industry to deliver inter-operability between blockchain networks and between blockchain networks and traditional networks.

Without this underpinning, tokenized asset markets will struggle to grow. Investors will be reluctant to get involved unless custodians and CSDs commit the capital and deliver the investor protection services that enable liquid token markets to develop with confidence. Likewise, issuers will abjure the token markets unless there is a trusted third party to fulfil the role of the CSDs in maintaining the ultimate record of who owns which token.

Indeed, token issuance is a major opportunity. If the securities services industry can expand its role at the issuance level from corporate trust and paying agency services to capturing all the data elements and sources in a token issue, including those that trigger actions by smart contracts, it will create efficiencies downstream. If the data is complete and consistent at issue, the need to cleanse or enrich or enhance or match the transaction data at the trade and post-trade level becomes irrelevant.

This is not a novel idea. The securities services industry has tried for decades to persuade issuers to automate the data associated with new issues of securities and corporate actions, including by the development of data standards, but without much success. However, tokenization also provides an unprecedented opportunity to secure the adoption of data standards by issuers, their advisers and others as the new markets are launched, especially if the idea secures the support of regulators.

In fact, tokenization can be accelerated by agreement among issuers and their advisers, asset managers, custodian banks and CSDs on a range of standards, covering origination (term sheets), smart contracts, APIs, registration, digital identity, inter-operability and other data sets and tools that facilitate the issuance, trading and custody of tokenized assets. ISSA is well-placed to advocate consensus on the adoption of token data standards.

That consensus must span institutions other than custodian banks, CSDs and technology vendors, and especially issuers and the investment banks and law firms that advise them, but also regulators capable of enforcing adoption. Otherwise, there is a risk that the adoption of standards is hamstrung by lack of engagement at the issuance level, leading to the persistence within the securities services industry of a group of providers willing to work outside the data standards.

Averting stasis of that kind is where ISSA can help the tokenized markets to grow. It can help to formulate a set of standards covering digital asset issuance and safekeeping and encourage adoption of them by its members and the wider securities services industry. This is best achieved by drawing up common questionnaires for completion by issuers and investors and publishing educational materials for both ISSA members and issuers and investors that do not belong to ISSA.

An ISSA paper on digital asset custody is already in preparation. It is exploring how to adapt traditional services to the digital asset opportunity; whether cryptocurrency holdings are an essential part of a digital custody service; whether bankruptcy remoteness requires legal or regulatory reforms; the status of fees paid to transaction validators on blockchain networks; inter-operability between digital asset wallets; and the novel nature of the risks created by peer-to-peer exchanges.

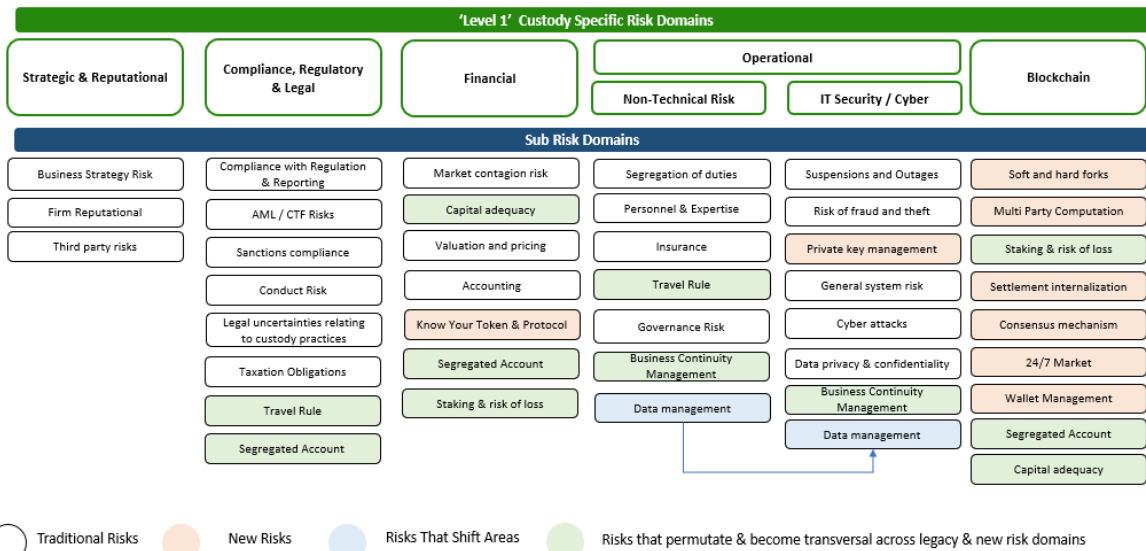


### 3.2 Holistic and non-siloed risk management

Organizations today face an evolving threat landscape in which risks are inter-connected. The global Pandemic, for example, impacted health, credit, macro-economic and balance sheet and profitability risks simultaneously. This was a reminder that the risks faced by financial institutions – cyber-security, health, natural disasters, climate change, protest movements, physical security, brand and reputation, geopolitical and legal and regulatory risks – cannot be managed separately.

Indeed, when the SAS Institute asked 300 senior bankers in 24 countries to choose their top three priorities from a list of ten separate risks, it found not one was chosen by more than one in eight respondents.<sup>8</sup> In other words, risk managers no longer disaggregate and rank risks in obvious ways. In short, it is fallacious to believe that the major shortcoming in risk management at banks is the persistence of an historical tendency to manage risks in siloes.

In securities services, risks are certainly inter-connected. According to the Deloitte model of the five custody risk domains (see the table below), all but one domain is inter-connected with the others. Although there is a tendency for some risks in securities services to attract disproportionate attention by becoming “fashionable,” while more immediate risks remain hidden, the challenge in securities services risk management is not to overcome siloes.



**Equation 1: Custody risk domains - traditional and digital assets<sup>9</sup>**

That said, responsibility for managing risks can still be divided within an organization below the level of the CEO. The Chief Risk Officer (CRO), for example, might be responsible for credit, market, liquidity and operational risk while cyber-security is handled by a separate Chief Technology Officer (CTO) or Chief Information Security Officer (CISO). The work of these decision-makers needs to be well co-ordinated if a decision made by one is not to have knock-on effects on the domains of the others.

A decision by a CTO to adopt the cloud, for example, can inadvertently increase the attack surface monitored by a CISO. An effective risk management function aggregates specialist knowledge. It must recognize the dependencies between technology risks (such as the cloud and cyber-security) and physical, operational, financial, compliance, legal, strategic and reputational risks. It must also recognize the inter-dependencies between the firm and the rest of the industry.

<sup>8</sup> SAS Institute, *From Crisis to Opportunity: Redefining Risk Management, How a more automated approach to risk management can transform banks’ performance, during the pandemic and beyond, 2021.*

<sup>9</sup> Source: Deloitte

Truly “holistic” management of risk must encompass the wider eco-system. Within every organization type in the securities industry, there is limited recognition of the risks inherent in “back office” operations. Central counterparty clearing houses (CCPs), for example, have a poor understanding of the risks associated with custody. As it happens, the best solution to these problems of mutual comprehension, connectedness of risks and co-ordination of risk management is technological.

In short, the real challenge is to digitize risk management. Securities services firms need to use digital technology to capture data (including unstructured data) from multiple sources to monitor threats, and then process it fast enough to provide information and insights to inform risk management decisions. It entails using AI and ML tools, and NLP, to process unstructured data sets such as telephone calls, social media, and emails to identify emerging risks.

Yet, although the benefits of investing in digitalization in terms of insights, forecasts, speed of analysis, cost savings and risk reduction are well understood, progress is slow. Half the banks surveyed by SAS were investing in the technology and the people with the AI and ML skills to automate data collection, processing, modelling, analysis and delivery, but only one in ten had actually managed to automate most of their risk management activities and just one in 16 had automated their risk modelling.

There are fields where ISSA can help to transform risk management without transgressing its organizational mandate or boundaries with other industry bodies. It could conduct a gap analysis of its Custody Risk paper<sup>10</sup> against the Principles for Financial Market Infrastructures (PFMIs) published in April 2012.<sup>11</sup> Crisis scenarios could be run against the risks identified in the paper to identify risks it does not address. The board could also convene crisis management groups when real risks arise.

ISSA could run educational projects to raise awareness of risk too. Case studies of historical (or fictional) risk events would be useful, especially in highlighting the operational dimension of risk. ISSA could also co-ordinate the publication of a scenario-based framework for managing risk events. Above all, ISSA could encourage the adoption of a data-centric approach to risk management, with a view to making predictions about where risks might arise and publishing a set of early warning indicators.

Many of these proposals pose questions about the willingness of members of ISSA to share data and experiences. Some firms will be sensitive about their reputation. Others will see their risk management processes as a source of competitive advantage. Accordingly, the ISSA board might poll the membership to assess whether the ISSA mandate can be changed to empower the organization to intermediate data sharing in risk management and set up crisis management groups.

### **3.3 Challenges of sanctions and geopolitics**

The securities services industry has wrestled with the operational challenge of implementing sanctions against states and individuals for many years, and especially since the terrorist attacks in the United States of 11 September 2001. Banks and financial market infrastructures have learned that even inadvertent compliance breaches can be expensive. In 2014, Clearstream Banking was fined US\$152 million by the Office of Foreign Assets Control (OFAC) for apparent violations of sanctions on Iran.

But the sanctions imposed on Russia after its invasion of Ukraine nevertheless posed an unprecedented challenge, because it was the first time a market fully integrated with the global financial system was sanctioned. Sanctions affected immediately both indigenous and international banks offering sub-custody services in Russia, and banks serving as depositaries to Russian issuers of depository receipts.

---

<sup>10</sup> ISSA, *Inherent Risks within the Global Custody Chain*, February 2017.

<sup>11</sup> The Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO), *Principles for financial market infrastructures*, April 2012.

The sanctions led to forced transfers of Russian securities; forced conversions of American Depositary Receipts (ADRs), and later a halt to all conversions; blocking of cash from sales and income and dividend payments; a risk of income payments bypassing Western systems and banks; continuing payments by Russian borrowers to non-Russian creditors via “S” accounts; and conversions of Russian securities into domestic instruments without the consent of Western investors.

Global custodian banks and CSDs that settle Russian securities and rouble-denominated assets had to freeze the accounts of Russian banks and of the National Settlement Depository (NSD), the Russian CSD. They also had to take account of sanctioned individuals in operational as well as client roles within the securities services industry.

Liability became an issue. Some holders of ADRs invested in Russian securities, for example, claimed they were unaware they had assumed Russian exposure. This was unreasonable. It was buy-side clients that chose to assume risk in Russia, not their service providers. Nor were global custodian banks and financial market infrastructures paid a sufficient risk premium to be made liable for risks attendant on a market being sanctioned. They nevertheless had to manage client concerns.

At the same time as disengaging themselves and clients from Russian financial assets, the securities services industry had to manage the impact of counter-measures. Customer cash and financial assets held at the NSD via sub-custodians, for example, were frozen by the Russian authorities. The counter-measures were designed deliberately to be difficult and unpredictable too, complicating the task. The securities services industry also had to respond to an increase in retaliatory cyber-attacks.

Nor have the sanctions against Russia remained stable since they were first imposed in February 2022. They have increased – the EU alone has issued 11 separate packages of sanctions – and evolved, which has required investment in measures to keep pace. As recent discussions about using frozen Russian assets to fund the reconstruction of Ukraine - and potential implementation of “pre-emptive” sanctions to dissuade China from invading Taiwan – indicate, sanctions will remain dynamic.

Using Russian assets held in custody abroad to fund the reconstruction of Ukraine is still being actively discussed. The options under consideration include straightforward confiscation of the reserves of the Russian central bank; pledging of the reserves; use of frozen Russian assets as collateral for loans; and direction of income from the assets to the reconstruction of Ukraine. Although all options will be subject to international law, they place the securities services industry in an invidious position.

Experience shows that although sanctions are in principle simple – a business cannot receive from or make payments to sanctioned entities and individuals, or deal with any of their assets – translating their intent into practical measures that remain within the law is complicated. Even sanctions soundly based in longstanding anti-money laundering and other laws challenge not just securities and property laws but post-trade systems and processes.

When governments unilaterally override laws, they overturn longstanding assumptions by which the securities services industry operates most of the time: the sanctity of contractual commitments, the integrity of the custody chain that runs from global custodians through sub-custodians to CSDs, and the rules by which assets and income are accounted for. For the securities services industry, sanctions are not just about the difficulty of implementation; they are about managing the wider effects.

So there is ample scope for ISSA to contribute to better management of the operational risks created by sanctions. First, because sanctions are not a competitive area, ISSA can read and analyse sanctions rules as they are published and disseminate practical advice on how to implement them. Secondly, ISSA can educate regulators on the practical difficulties and potentially perverse consequences of particular measures.

In the longer term, ISSA can help in two other ways. The first is to write and maintain a playbook – a compendium of lessons learned, operating procedures, and accounting and legal treatments, including the issue of liability for client losses – to follow when sanctions are imposed. This should be prepared in conjunction with the Custody Risk rather than (as now) the Financial Crime Compliance Working Group<sup>12</sup>, since it must address product, legal and accounting risks and not compliance issues.

The second is to set up a sanctions crisis centre, to bring together industry participants (including not just investors but issuers, which are at risk of paying dividends to sanctioned entities) at twice weekly on-line meetings whenever a crisis erupts. This would improve the sharing of information. In February 2022, for example, it would have helped all parts of the industry comply if they had understood Russian banks were being excluded not just from SWIFT but from other financial messaging systems as well.

Managing sanctions regimes effectively may not be an area in which securities services firms compete, but it is certainly one in which every firm has a stake in protecting the reputation of the industry. So larger firms should help smaller firms without resenting the fact that they are making a bigger contribution. Nor need the crisis centre remain in being, with all the costs that implies. It can be convened to deal with substantial issues as they arise and closed once the useful work is done.

### 3.4 ESG and securities services

The securities services industry services asset managers and institutional investors. The decision to invest in ESG strategies lies beyond the securities services industry but the proportion of assets under management (AuM) in sustainable strategies has increased. This has put global custodians in particular under pressure from asset-owner clients to use data to prove that their portfolios are managed in line with ESG criteria that measure the sustainability of investments.

This demand for *compliance monitoring* is the obvious way in which ESG impacts the industry. The principal difficulty is the lack of reliable ESG data. The information supplied by specialist data vendors is routinely blamed for “greenwashing” but the companies in which asset-owners are invested are not held to disclosure standards which would make information reliable and comparable. Multiple initiatives to standardize disclosures<sup>13</sup> did not initially increase confidence in ESG data quality.

However, this is now changing. In September 2020 the World Economic Forum published a paper<sup>14</sup> that distilled the multiplicity of ESG reporting frameworks and metrics into a standard set of 21 core and 34 expanded metrics and disclosures. These encouraged other standards-setters to raise ESG reporting to the same level as mainstream financial reporting and work together to develop an integrated set of standards. This will make monitoring on behalf of end-investors easier.

The second way in which ESG impacts the securities services industry is via the need to conduct *due diligence* on suppliers. The due diligence questionnaire prepared by the Association for Financial Markets in Europe (AFME) to simplify assessments of global custodians and sub-custodians, for example, includes 32 questions designed to establish the ESG credentials of service providers, such as energy efficiency, carbon emissions, treatment of ethnic minorities and independent directors.

The third way in which ESG affects the industry is via *regulations*. The European Union, for example, has adopted a Corporate Sustainability Reporting Directive (CSRD), which specifies non-financial reporting requirements; a Sustainable Finance Disclosure Regulation (SFDR) that imposes mandatory ESG disclosure obligations on asset managers and their service providers; an EU Taxonomy that assesses the sustainability of any economic activity; and a Green Bond Standard.

---

<sup>12</sup> The Financial Crime Compliance Working Group has created a Geopolitical Impacts Forum that is looking at the current challenges of sanctions and geopolitics.

<sup>13</sup> Among the institutions working on ESG reporting and disclosure standards are the European Commission, the International Organization of Securities Commissions (IOSCO), the US Securities and Exchange Commission (SEC), the International Financial Reporting Standards (IFRS) Foundation, the International Federation of Accountants

(IFAC), the Climate Disclosure Standards Board (CDSB), the Global Reporting Initiative (GRI), the International Integrated Reporting Council (IIRC) and the Sustainability Accounting Standards Board (SASB).

<sup>14</sup> World Economic Forum, *Measuring Stakeholder Capitalism: Towards Common Metrics and Consistent Reporting of Sustainable Value Creation*, September 2020.

Securities services firms, like every other part of the financial services industry, are obliged to implement these regulations by, for example, using the EU Taxonomy when advising buy-side clients on the degree of compliance of their portfolios with ESG criteria. Yet the risk of doing so is palpable when requirements are not standardized across different jurisdictions. Regulators in both the United Kingdom and the United States have issued fines for misleading sustainability claims.

The fourth way in which ESG impacts the securities services industry is more direct. Among the *asset-servicing* responsibilities of custodian banks and CSDs is exercising the voting rights of shareholders (proxy voting). This practice is also encouraged by European regulation, in the shape of the Shareholder Rights Directive. Another custodial duty is to recover losses incurred by investors through corporate mismanagement or fraud by helping clients make claims following successful litigation (class actions).

Class actions, which began in the United States, have now spread to other markets. Custodians face major challenges in monitoring class action notices, finding investors eligible to make a claim, meeting deadlines to make claims and actually filing claims. The efficiency of the process varies between jurisdictions. Proxy voting is not efficient either, being largely manual outside markets where CSDs provide an electronic service. Most custodians have chosen to outsource the work to specialists.

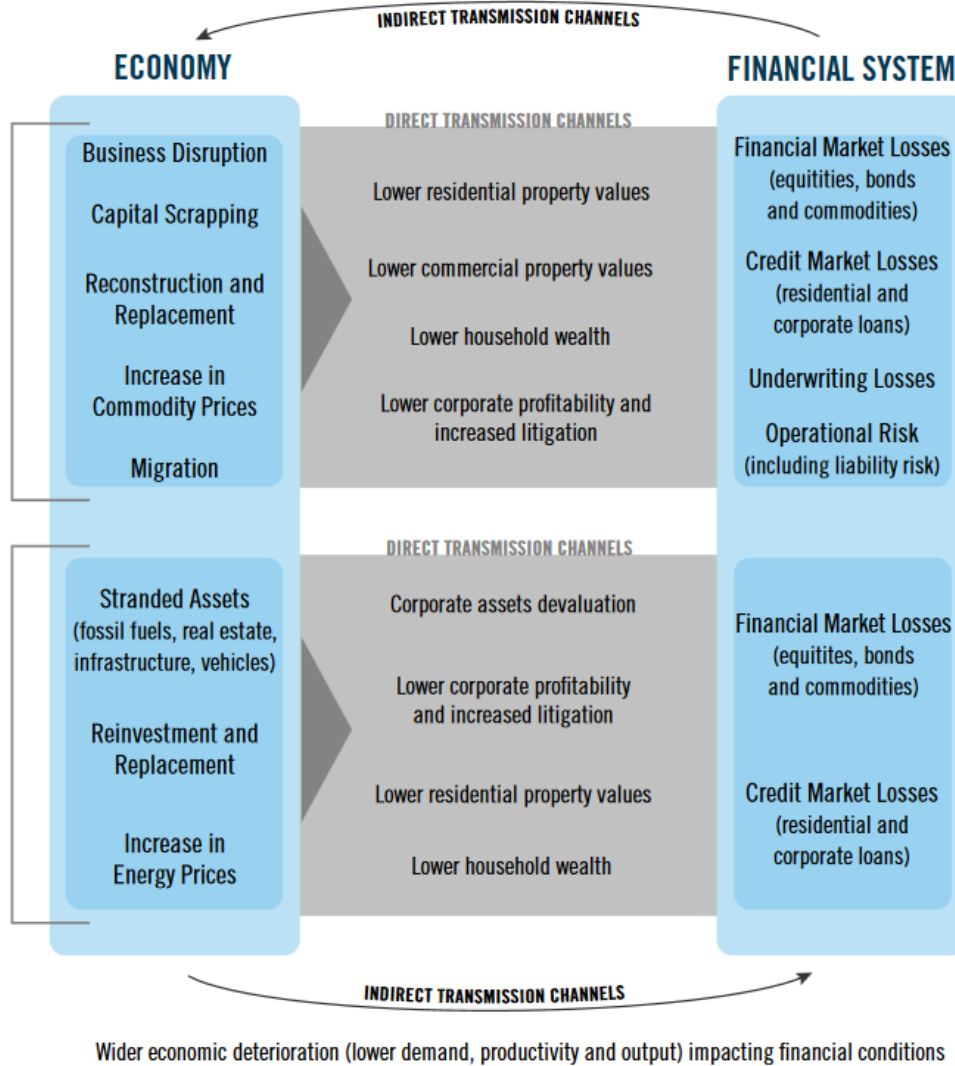
There is a fifth way in which ESG affects the securities services industry. Its members are under an obligation to manage the *physical risks* of climate change (such as extreme weather disrupting or destroying a facility, testing business continuity and disaster recovery plans) and the impact on their business of the cost of *transitioning to a low carbon economy* (notably through a reduction in the financing or servicing or credit quality or value of clients exposed to carbon-intensive industries).

There is a variety of mechanisms by which these physical and transition impacts can transmit risk from the natural environment to the real economy and by extension to the financial economy. As the diagram below illustrates, these include falling asset values, declining corporate profitability, increased migration and lower household incomes in the real economy translating into falling financial asset values, increased debt defaults and mounting underwriting losses in the financial economy.

As the Bank for International Settlements (BIS) has pointed out, these transmission channels can result in increased credit, market, liquidity, operational and reputational risks for banks in particular.<sup>15</sup> Lower asset values, for example, reduce the value of those assets as collateral and increase the risk of a loss-making default. The consequent losses incurred by banks reduce the share price as well as the balance sheet, with further knock-on effects on the ability of the banks to attract funding and lend.

---

<sup>15</sup> Basel Committee on Banking Supervision, Bank for International Settlements, *Climate-related risk drivers and their transmission channels*, April 2021, page 1.



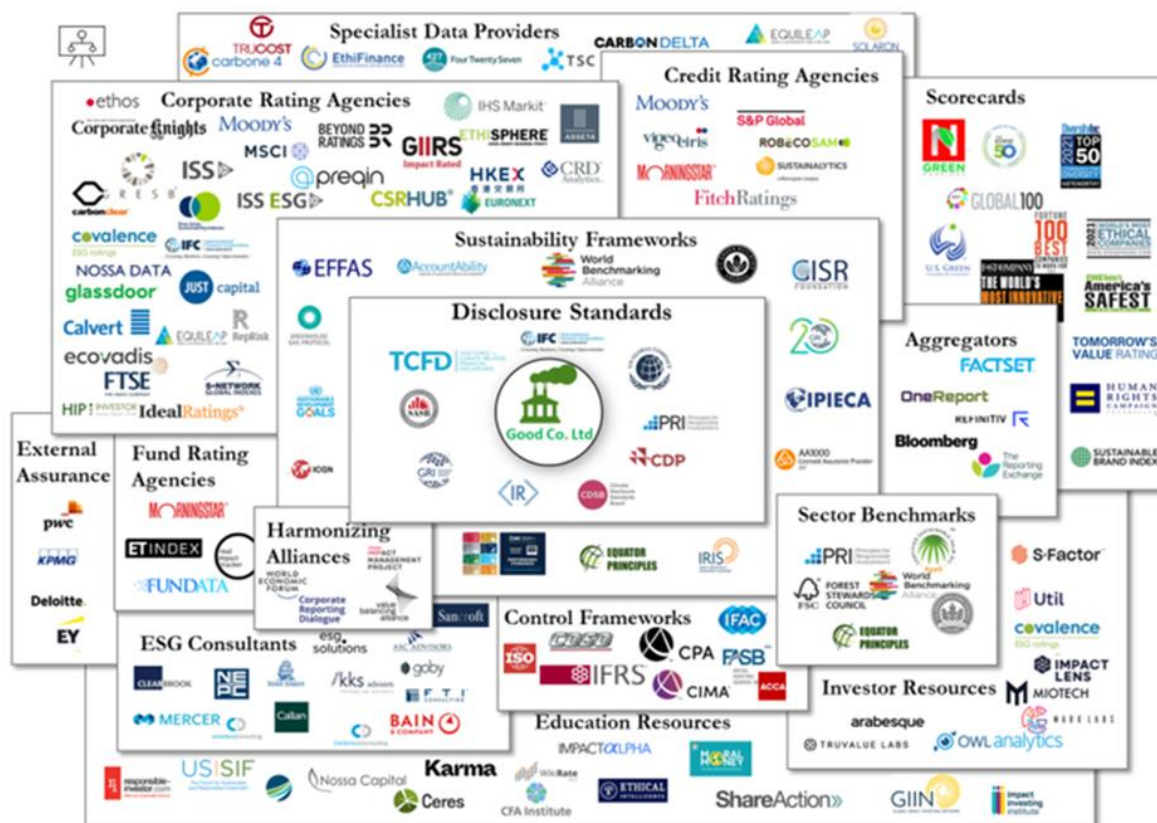
**Equation 2: ESG transmission mechanisms from the real economy to the financial economy<sup>16</sup>**

As financial institutions, members of the securities services industry have a responsibility to monitor and mitigate these risks and manage the consequences for themselves and their clients when they occur. In the case of financial market infrastructures, that responsibility is enshrined in the governance and risk management criteria laid down in the PFMI issues by the international securities and financial market infrastructure regulators in April 2012.<sup>17</sup>

So ESG is not a single phenomenon, but a multi-faceted hydra. The risks and opportunities are hard to comprehend and manage, but the increasing intensity of the regulatory and legal focus on ESG is creating a demand for control. Multiple specialists have emerged to provide it (see the illustration below), which has only added a further layer of complexity. This is why securities services clients are looking to the industry to provide services which make ESG risks and obligations manageable.

<sup>16</sup> Source: DTCC, Climate-Related Financial Risk: An FMI's Perspective, February 2023, citing The Network for Greening the Financial System, A Call for Action: climate Change as a Source of Financial Risk, April 2019.

<sup>17</sup> The Committee on Payments and Market Infrastructures (CPMI) and the International Organization of Securities Commissions (IOSCO), *Principles for financial market infrastructures*, April 2012.



**Equation 3: The complex ESG eco-system**

It is worth noting that there are new business opportunities in ESG for securities services firms too. Green bonds (fixed income finance for climate-related or other environmentally sustainable investments) are an obvious one. Another opportunity lies in carbon credits, which also need to be cleared, settled and safekept. However, until both markets are sufficiently mature, they carry risks of product misdescription (“greenwashing”<sup>18</sup>) and bubble-inducing over-investment.

For ISSA, advising members on green bonds and carbon credits lies in the future. For now, ISSA is best advised to focus on immediate problems. Its members are already exploring some of the impacts of ESG on the securities services industry via a sub-group of the Asset Servicing Working Group (which is focused on corporate governance issues such as class actions and proxy voting) and a sub-group of the Standardization Working Group (which is focused on ESG standards in the industry).<sup>19</sup>

This work can now take account of new ideas in two main areas. Though ISSA can contribute to the development of ESG *regulation*, and the mainly data and benchmark methodology challenges of *compliance* monitoring, the two areas where ISSA can influence the development of ESG products and services are narrower. The first is to impose order on the *due diligence* process. The second is to make corporate governance *asset servicing* processes (class actions and proxy voting) more efficient.

<sup>18</sup> In the case of “green bonds,” the International Capital Markets Association now publishes a set of voluntary “green bond principles” for issuers to follow that aim to enhance the integrity of the market; they include disclosing the use of the proceeds. See <https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/green-bond-principles-gbp/>

<sup>19</sup> See in section 4.2, page 37 below.

On due diligence, ISSA can prepare and publish a standard framework covering the due diligence process that explains to issuers what questions need to be asked; to respondents why the information needs to be disclosed; and to those analysing the information received in completed questionnaires how to contextualize it. Members of ISSA are natural evangelists for such a framework within their own firms and in the wider industry.

ISSA could draw up its own ESG due diligence questionnaire. Although ESG questions are included in the AFME questionnaire, they make up less than a tenth of the 421 questions, and it is not clear that the information given is being absorbed and analysed. An ISSA alternative, shaped by an agreed framework, would be more useful and meaningful. It would also make it easier for firms to complete the AFME questionnaire, which would save time and money.

On ESG in *asset servicing*, the securities services industry has the advantage that it is already densely involved in helping companies issue securities, maintain registers of shareholders, distribute entitlements to investors and enable shareholders to exercise their voting rights. With the increased momentum imparted to proxy voting and class action claims by ESG there is an opportunity for the industry to not just enhance efficiency but make a distinctive contribution to investor engagement.

Class actions are a field in which the risk and liability for custodian banks is significant and exacerbated by an historic tendency to outsource the research, portfolio monitoring, claims filing and distribution of payments work to specialist data vendors. There is a clear opportunity for ISSA to create a robust set of class action data processing standards to govern how the entire process of initiating and securing claims is managed.

The other opportunity in *asset servicing* for ISSA is proxy voting, where ISSA members are heavily involved. Custodian banks, working in conjunction with specialist proxy voting agencies, supply services that enable investors to exercise their voting rights in multiple jurisdictions around the world. In some of those jurisdictions, CSDs have built digital voting platforms to expedite the process. They are capable of supporting a growing appetite to attend company meetings remotely.

Pressure on investors to exercise their rights continues to intensify. ISSA can make it easier for investors to vote by encouraging adoption of messaging standards and the development of digital infrastructure that is resilient, scalable and flexible enough to enable retail as well as institutional investors to vote, perhaps through partnerships with on-line banks and wealth managers. ISSA can draw up best practice guidelines for proxy voting, which its members could undertake to implement at the local level.

ISSA can also help to educate issuers. Here, it helps that the Financial Reporting Council (FRC) has already published a set of good practices for issuers to follow in securing the engagement of their shareholders in the business of the company throughout the year, and especially at shareholder meetings, organized as a set of seven principles.<sup>20</sup> In their focus on shareholder communications and proxy voting, the FRC principles play to the strengths of the securities services industry.

### **3.5 Potential for mutualization**

In the securities services industry, profitability is under pressure. Cost-cutting is hard to sustain, and any gains tend to be offset by rising regulatory compliance costs. The obvious solution is digital transformation. Although the demands of volatile markets and home-working during the Pandemic have increased spending on the digitalization of operational processes, the “back office” still tends not to attract the budgets needed to transform operations through technology.

This is the context in which mutualizing the costs of repetitive, non-differentiating post-trade processes is being discussed afresh. The securities services industry has for decades outsourced some of its own operations to third-party providers (often in offshore or nearshore locations with lower labour costs) and insourced operations from buy-side clients (with the aim, which is not always achieved, of capturing economies of scale by spreading a higher volume of transactions across a single platform).

---

<sup>20</sup> Financial Reporting Council, *Good Practice Guidance for Company Meetings*, July 2022.



The theoretical basis of the discussion is sound. Operational processes do not offer competitive differentiation and are rich in scope to secure economies of scale. Mutualization can reduce risks as well as costs, and especially the risk of migrating existing business off legacy technology systems. By sharing the initial costs of introducing new technology, mutualization can also accelerate innovation by lowering the cost barrier. It should, if executed well, increase operational resilience too.

The growing use of cloud and APIs makes it cheaper to migrate clients and data off legacy systems and on to mutual platforms and simplifies the process of accessing mutualized services. Mutualization naturally increases the volume of digitized data that can be exchanged, analysed and consumed by AI and ML. By generating network effects as well, mutualization can increase sales of products. Lastly, it can actually increase competition by lowering another barrier - high investment costs - to entry.

There is more than one route to mutualization. The first is simply to buy mutualized services, as many banks buy technology, compliance, customer identity and payments services from collectivized entities. CSDs fit into this bracket, as does Omgeo CTM, the global trade matching service owned by the American CSD. Another model is to set up utilities, such as SWIFT. A third is to outsource to a third-party vendor which can amortize the costs of providing services across a larger client base.

Recent examples exist where mutualization has worked. One is the Know Your Customer (KYC) Registry provided by SWIFT. Designed to help banks perform customer due diligence checks to comply with Know Your Customer (KYC), Anti Money Laundering (AML), Countering the Financing of Terrorism (CFT) and sanctions screening checks, almost 6,000 banks use the Registry to publish their data and receive data from counterparties. It helps to reduce the costs of processes duplicated at multiple banks.

However, there are obstacles to mutualization. Ownership and control are hard to settle. It is difficult to assign liabilities between the mutualized entity and the participants. Banks fear loss of control. Clients fear their data will be compromised. Regulators see outsourcing and concentration as risky. And it is certainly easier to mutualize in one country under one regulator. Of more than 200 “interbank eco-systems” in 30 countries studied by Deloitte, less than 5 per cent were cross-border.<sup>21</sup>

It follows that successful mutualization must balance ownership and control, cost and compliance and especially standardization (to contain costs) and flexibility (to enable users to customize the products and services which rely on the entity, including the freedom to work with whichever third parties they choose). Above all, mutualization necessitates unbundling parts of vertically integrated processes, transferring them to a mutualized entity and then integrating what is outsourced with what remains.

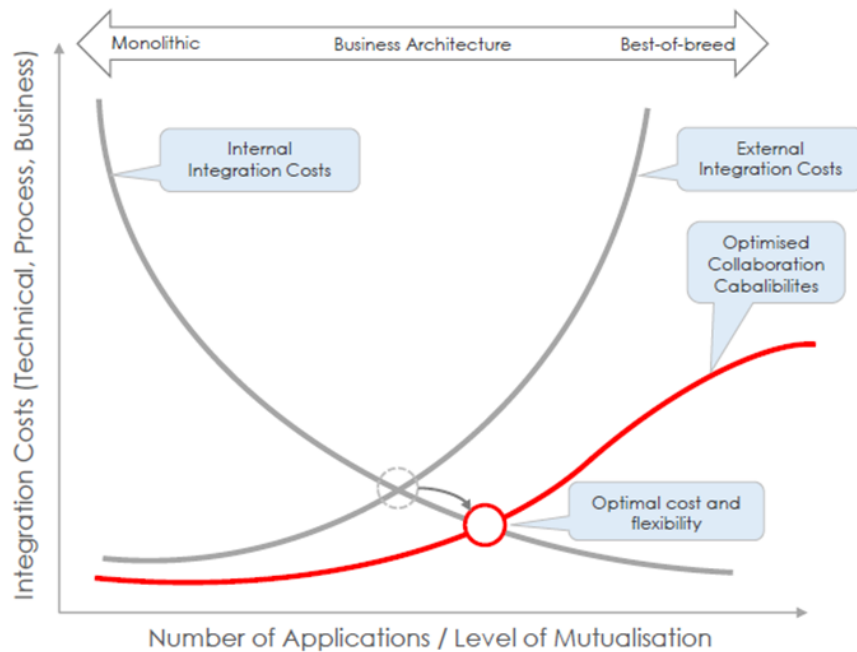
This is difficult to do. Indeed, the costs of integration are the primary determinant of the success of a mutualization. As the chart below shows, the costs of internal integration are highest when every function is done in-house (see the line marked “Internal Integration Costs”) but they can become equally high (see the line marked “External Integration Costs”) when every function is mutualized. The optimal combination is a balanced mixture of in-house and mutualized functions that minimizes integration costs (see the red circle where the “Internal Integration Costs” line and the red “Optimised Collaboration Capabilities” line intersect).

---

<sup>21</sup> Deloitte, *Interbank ecosystems in Europe: Accelerated transformation through collaboration*, April 2021.

## OPTIMISING COLLABORATION LEVELS

EXTERNAL INTEGRATION CAPABILITIES REQUIRES FOCUS



**Equation 4: Striking the optimal balance between internal and external operations<sup>22</sup>**

These constraints influence which functions in the securities services industry are best-suited to mutualization. Ideal candidates are non-competitive but problematic functions, where regulators are unlikely to object. If the process entails high levels of duplication between service providers and is either standardized already or can be standardized relatively easily before it is mutualized - through diffusion of industry best practices – it is an obvious target.

The table below lists ten functions that might be suitable for mutualization. Though securities services insiders are apt to believe every part of every function is an actual or potential source of competitive advantage, only two of these functions actually are. The overwhelming majority are processed in a sub-optimal way. Mutualization of all but one of them is unlikely to provoke regulatory objections. The only real barrier is liability.

Concern about liability for the accuracy of shared information is a factor in data-sharing ventures such as the SWIFT KYC Registry. The same will be true of sharing data about sanctioned states, companies and individuals. A mutualized utility without substantial capital, and earning nothing but modest transaction fees, is not in a position to assume an open-ended liability. Which implies that individual users will likely have to retain liability. This could be discouraging.

<sup>22</sup> Source: of model: Incentage: Prof. Winter, University St. Gallen, Switzerland

Function	Non-Competitive/ Shared Problem?	Regulatory Barriers?	Sub- optimal?	Liability potential?
Corporate action sourcing and validation	Yes	No	Yes	High
Tax claim processing	Yes	Potentially yes	Yes	High (Reputational)
Trade matching and repair	Yes	No	Yes	Low
Market claims	Yes	No	Yes	Low
Two factor authentication	Yes	No	Non- existent	High
Proxy voting	Yes	No	Yes	Medium
Regulatory reporting	Yes	No	No	Neutral
Onboarding and account opening	No	No	Yes	High
Sanctions screening	No	No	No	High
Static data/securities master	Yes	No	Yes	Low

**Table 1 : Possible use-cases for mutualization**

Governance is likely to be another barrier to mutualization. The SWIFT model – a cooperative with a board weighted towards the heaviest users – is one option. The user-owned, user-governed model of Euroclear, the DTCC or Proxymity is another. Successful models certainly incorporate a user interest in the equity. Since there is likely to be multiple entities too, with functions duplicated between countries, firms will have to join and govern several entities.

ISSA can help the industry make progress on these opportunities and problems by challenging its members to ask themselves whether they over-estimate the value of their intellectual property and competitive advantage, and under-estimate the service improvement benefits to clients of mutualized services (on top of the cost savings). This could take the form of a survey of the membership, with a view to analysing and publishing the results in a white paper.

The paper should assess the barriers to success, and whether the benefits outweigh the maintenance of the status quo. It should propose a Target Operating Model (TOM) that illustrates the future state of the chosen functions. There may be a case for establishing a Mutualization Working Group, though synergies with existing Working Groups should be explored first. ISSA could also undertake work to encourage standardization of the processes underlying the functions chosen for mutualization.

## 4 Retaining relevant in a changing world

Like any industry, securities services are not immune to competition in any part of their markets. Challenges are mounted by both existing service providers seeking to enlarge their franchise and by outsiders looking to displace the incumbent in part or all the services they offer. These challenges are not always existential, in the sense of disintermediating existing providers, but they do oblige incumbents to prove to their customers that they are still relevant.

CSDs, for example, are making it possible for global custodians and global investment banks to bypass sub-custodians in at least some service areas. Global and regional sub-custody networks, which benefit from harmonization and standardization of CSD access points and operating procedures, and almost always retain a global custody or funds franchise of their own in domestic markets, have long since out-competed purely domestic sub-custodians.

Buy-side clients are increasingly aware of sub-custodian risk. Sub-custodian banks come in many different shapes and sizes, some of which are large enough to internalize business while others rely entirely on local infrastructure. Their services also span a wide variety of jurisdictions, with potentially different outcomes if assets are lost or entitlements foregone through operational error, default, theft or fraud, as the collapse of Lehman Brothers and the Madoff Ponzi scheme showed in 2007-09.

Those disasters persuaded European regulators to make custodian banks strictly liable for any loss of customer assets, even if they do not actually control the assets at the time of loss.<sup>23</sup> Along with custodian bank decisions to make customers whole on securities lending collateral reinvestment losses, strict liability undermines the idea that custody is an off-balance sheet business. Lately, US regulators have made custodians put digital assets owned by clients on the balance sheet.<sup>24</sup>

On top of strict liability, sub-custodians face mounting compliance costs. They must now manage customer due diligence (CDD) procedures – namely, KYC, AML, CFT and sanctions screening checks – when on-boarding clients and clients of clients. They also face mounting regulatory distrust of omnibus and nominee accounts in favour of end-investor and segregated accounts.<sup>25</sup> As risk increases, margin decreases.

Global custodians servicing mainly asset manager and asset owner clients are benefiting from the option to use market infrastructures instead of sub-custodians, but they face competitive challenges of their own. These include local and regional sub-custodians retaining or recapturing domestic global custody business in a geopolitical environment that favours national “champions” over foreign banks. But the biggest threat to global custodians comes from competitors armed with the latest technology.

The Internet is evolving in ways that are not hospitable to traditional global custodians. The shift from Web 2.0 (characterized by closed platforms owned by centralized Big Tech firms creating value by monetizing data) to Web 3.0 (characterized by open or “permissionless” blockchain platforms owned by users creating value by trading peer-to-peer) is making its presence felt in the securities industry via the experiments taking place in the DeFi markets.

DeFi threatens to disintermediate global custodians through the issuance of tokenized securities by decentralized autonomous organizations (DAOs) instead of companies and the replacement of fiat currency by tokenized commercial bank (Stablecoins and tokenized deposits) and central bank money (CBDCs). Transactions are not matched, cleared and settled by long chains of intermediaries but settle instantly by the movement of tokens between digital wallets.

---

<sup>23</sup> This was enforced via the Alternative Investment Fund Managers Directive (AIFMD) of 2013 and the fifth iteration of the Undertaking for Collective Investment in Transferable Securities Directive (UCITS V) of 2014.

<sup>24</sup> SEC Staff Accounting Bulletin 121 (SAB 121) of March 2022 proposed digital asset custodians put customer assets in custody on their balance sheet. See also the “Safeguarding Rule” in footnote 1, page 5.

<sup>25</sup> See Financial Crime Compliance in section 4.2, page 36, below.

The digital wallets assume the core custodial role of safekeeping of assets, and the register of owners is updated automatically as transactions are settled. Previously profitable intermediary activities such as the lending of securities and the extension of credit will be taken over by smart contracts embedded in blockchain protocols (as AMMs) and tokens themselves. Asset servicing, or the collection of entitlements, will also be automated by smart contracts.

These possibilities are not theoretical. Sovereign and supranational issuers have issued bonds on to blockchain networks, including public ones. Blockchain-based securities financing platforms are handling live trades. Initiatives to tokenize funds, and the securities held by funds, are attracting interest from institutional asset managers. As BlackRock CEO Larry Fink famously said in April 2023: "The next generation for markets, the next generation for securities, will be tokenization of securities."

Importantly, the realization of the full potential of blockchain-based tokenization threatens not only global custodians but financial market infrastructures too, and not just CSDs but CCPs as well. Replacing centralized central counterparty clearing houses with a "distributed financial market infrastructure," in which transactions are executed peer-to-peer on a blockchain network supported by instant variation margin calculations and payments, was a possibility actively discussed in 2022.<sup>26</sup>

However, in confronting the threat, at least in the short-term, the incumbents can count on three principal strengths. The first is the high level of customer trust in the integrity and expertise of established, regulated entities. The second is the long experience of incumbents using technology to improve efficiency, automation and client service. The third is a history of successful partnerships with technology vendors, which can help incumbents adapt their services quickly to competitive threats.

Many technology-driven disruptors are already looking to work with incumbents, rather than against them. After all, the incumbents have an installed client base and deep knowledge of how markets work in practice. In addition, displacing a regulated entity by acquiring a regulated licence of equivalent value is a long and expensive undertaking. It would nevertheless be a mistake for incumbents to be complacent. They need to act to remain relevant.

There are four actions incumbents should take. The first is to assess their role continuously to ensure it adds value, not least by making basic services more efficient, and seize opportunities to add further value. The second is to monitor trends, and make judgments about which to accelerate, adopt, follow or ignore. The third is to partner with technology vendors, especially where innovators need the cover of a regulatory licence. The fourth is to add efficiency by mutualizing non-differentiating activities.<sup>27</sup>

ISSA can help the industry pursue these four aims by identifying the areas of overlap between the current Working Groups. The overlaps will provide a list of areas of focus, which can then be placed in an order of priority to be agreed by the Board, so the Working Groups concentrate on what matters over the next two years. ISSA should also consider moving beyond the publication of Working Group papers to agitate for more collaboration between members and a faster pace of change in the industry.

---

<sup>26</sup> See, for example, <https://www.worldscientific.com/doi/10.1142/S2705109921500024>

<sup>27</sup> See section 3.5 above.

## 5 The Work of ISSA

### 5.1 Suggested areas of focus for ISSA in the future

At the 2022 Symposium, members chose four priorities for the future of ISSA: increasing the flow of talent into the industry, chiefly by playing a larger role in education and training; collaborating more closely with regulators, especially to improve their knowledge of digital asset custody risks; widening the membership of ISSA beyond custodian banks, CSDs and technology vendors, and especially to issuers; and a focus on improving the efficiency of customer due diligence at onboarding.

Progress was made in 2022-23 on all but one of these priorities. Half the current Working Groups name education and training as an explicit goal and it is an implicit goal of all the others. Greater use is being made of webinars, podcasts and social media. The ISSA paper on Inherent Risk in the Global Custody Chain is being updated to take account of digital asset custody and the Distributed ledger technology (DLT) Working Group is publishing a paper on digital asset custody. To improve customer due diligence, a new Working Group on digital identity and onboarding is already at work.<sup>28</sup>

Only the idea of broadening the membership of ISSA remains under-developed. Of the 129 delegates from 78 firms that attended the 2023 Symposium, 94 per cent came from traditional membership groups. That said, membership of ISSA has increased by an eighth since 2022, and by nearly a fifth since 2020, and collaboration with other trade associations (such as Global Digital Finance (GDF)) has begun.<sup>29</sup> Indeed, trade associations are seen as a practical way of approaching the 2022 priority group: issuers.

Issuers have a major impact on the securities services industry because their issuance and corporate action activities create multiple challenges throughout the length of the securities services value chain. However, any engagement with them cannot consist of complaints. A more positive approach would, for example, explain that badly designed corporate actions limit take-up by investors. Engaging with issuers via their trade associations and issuing agents remains an ISSA objective in 2023-24.

Another area where collaboration with groups outside the securities services industry could be improved is membership of the Working Groups, though it is not without risk. External perspectives can improve the quality and reach of their output but a surfeit of outsiders would risk diluting the securities services industry focus and even the overall culture of ISSA. A safer option is to draw on the knowledge of other parts of the institutions which already belong to ISSA.

Indeed, ISSA could do more to improve collaboration between its existing members. Financial crime is a case in point. A global cyber-attack, for example, would affect all parts of the industry, so it seems to make obvious sense for members of ISSA to share information about cyber-attacks, albeit within confidentiality perimeters set by national regulators. On the other hand, it might be wiser for ISSA to help its members access specialist advice rather than set up an information-sharing service of its own.

After all, the ISSA membership is broad. Smaller firms not only have fewer resources than larger ones, but often do not know where to turn in a crisis, so directing them to sources of help would be equally valuable and more achievable than ISSA providing a service itself. The Customer Security Programme SWIFT launched after the Bangladesh Bank heist in 2016, for example, entailed a massive diversion of resources. It took seven years to raise security audit coverage to 96 per cent of SWIFT members.

---

<sup>28</sup> For digital asset custody see Custody risk 2023 in Section 4.2, page 33, and for digital identity and onboarding, see Digital identity and onboarding in section 4.2, pages 33-34 and for Distributed ledger technology see Section 4.2, pages 34-35.

<sup>29</sup> See in the Distributed ledger technology Working Group in section 4.2, page 34-35.

However, ISSA could pursue a less ambitious version of crisis collaboration than a permanent information-sharing body. This is to establish a temporary crisis centre to pool information when a crisis - such as the Russian invasion of Ukraine, and the subsequent expansion of the sanctions regime – occurs.<sup>30</sup> Although it carries a risk of groupthink, reducing the effectiveness of the response, a crisis centre could save time and money and speed implementation of policies throughout the industry.

Implementation, as opposed to education and influence, is not an historic strength of ISSA. Indeed, members of ISSA do not always implement the principles – embodied in standards and best practices - that the organization itself promulgates, despite the effort that even non-compliant firms put into creating them. Which is why some members argue ISSA should insist commitment to implementing and upholding ISSA-sanctioned principles be made a formal requirement of membership.

They argue ISSA members have an obligation to bring their own advice to life. But others see prescription as counter-productive. Experience – with the financial crime compliance principles, for example – shows that making ISSA best practices non-mandatory can actually increase adoption. A possible compromise is to make disclosure of compliance mandatory, turning it into a badge of honour for the compliant, but on a generous timetable that makes allowances for systems changes.

The ISSA Board will review the suggestions made and, with the executive team, decide where resources should be focused. Compromises are characteristic of an organization that seeks commitment and participation rather than obligation or compliance. Deciding priorities is vital if the work of ISSA is to remain current and relevant today, let alone help to map the future of the securities services industry. It is easiest to focus on priorities that can be found in areas susceptible to collaboration. Nothing illustrates this truth more profoundly than the entities that create the principles that are at issue: the Working Groups.

## 5.2 Current working group activities

Working Groups contribute directly to the ISSA principles of *connection* and *change*, as well as *collaboration*. First, they *connect* different perspectives – banks, CSDs, technology vendors, consultants, trade associations and, most importantly, customers – in an industry which makes it easy to be insular. The Working Groups contain multiple views of the same issue, mine the knowledge and experience of different parts of the industry and enable the customer voice to be heard.

Secondly, Working Groups facilitate *collaboration* between different people and interests in the securities services industry. They provide an opportunity for knowledgeable and experienced people to concentrate on industry challenges and issues away from the pressures of their day-to-day jobs. Collaboration is also educational. Large and small firms, and national and international regulators, and younger and older people, learn from each other, diluting a natural bias to rely on personal experience.

Thirdly, Working Groups aim to effect *change*. They are not talking shops but action-oriented bodies that exist to translate understanding into change via published standards and best practices. They can also effect change more rapidly because they eliminate the time and costs and duplication associated with different members of the industry working on the same subjects simultaneously. For the same reason, Working Groups are not perpetual. They close down as soon as their useful work is done.

The sunset clause built into Working Groups ensures that they are focused always on issues that are affecting the industry immediately or which are likely to become relevant in the foreseeable future, so it is impossible for a Working Group to rehearse familiar subjects endlessly. Working Groups also work on subjects that are not being addressed elsewhere. There were 11 of them in existence at the time of the Symposium, five more than at the time of the 2022 Symposium:

---

<sup>30</sup> This was proposed by the Challenges of sanctions and geopolitics Break-out Group. See Section 3.3 on page 21 above.

**Asset Servicing.** It is not surprising that this is the second largest group – with 79 members drawn from 36 firms – because it deals with the most vexing day-to-day service challenges of the securities services industry. It has in the past published work on corporate actions, withholding tax and proxy voting. The Group has since the 2022 Symposium published papers on increasing standardization and reducing manual processes in withholding tax relief and recovery processes (July 2022) and on a model for a single data source in corporate actions to reduce re-keying of data (February 2023). Its current priorities are corporate governance (proxy voting and class action claims in particular) and technology enablers (in particular the scope for asset servicing functions such as corporate actions and proxy voting to be enhanced by the use of APIs to share data). On corporate governance, the Group is currently soliciting input from members of ISSA before publishing a paper. On technology enablers, the Group is addressing the problem that APIs are mostly bespoke and not standardized, despite the existence of API libraries, because they are written to solve immediate problems. To avoid confrontation with industry participants that believe bespoke APIs give them a competitive edge, the Working Group will not attempt to define an API standard but will instead recommend its development, possibly via a SWIFT Market Practice Group. The Working Group is also exploring two other technology enablers. The first is the potential of AI and ML to transform issuer data into standard formats. The second is whether blockchain and cloud technology can replace sequential exchanges of data between CSDs, custodians, brokers and exchanges with simultaneous access to a common set of data to which they can add material. No timetable is yet set for the completion of this work.

**Custody Risks 2023.** This is a re-establishment of a previous Working Group. Its immediate purpose is to update a best-selling ISSA report that dates back more than 30 years. When *Report on Global Custody Risks* was published in 1992, it became one of the most popular and influential publications ever released by ISSA. Updated in 2017 as *Inherent Risks within the Global Custody Chain*, the second version of the paper is now the most downloaded ISSA paper of all. The update is needed to take account of new and emerging risks in securities services, such as geopolitical, ESG, merger, financial crime compliance, cyber-security and digital asset custody risk. The report will include best practice guidelines for managing and mitigating these risks. The intention is to build use-cases into the document, along with counterfactuals to illustrate how outcomes might have varied if different decisions were made. Because the work of the Group is in large part to educate the industry, its customers and regulators about the evolving nature of custodial risks, publication will be accompanied by webinars and promotions through social media.

**Digital Identity and Onboarding.** This is another new Working Group, which was formed in response to the 2022 ISSA Symposium action priority to explore the challenges and potential solutions for customer due diligence. Running KYC, AML, CFT and sanctions screening checks on securities services customers has become a painful and expensive process fraught with the risk of inadvertent compliance breaches that lead to regulatory fines. Digital identities, in which the data needed to identify an individual or organization is digitally represented rather than physically presented and reviewed, are often cited as the most efficient solution to what is currently a highly manual and non-standardized process.



The objective of the Working Group is to devise a digital identity and onboarding standard capable of covering multiple use-cases, products and jurisdictions – to be exact, 90 per cent of identity checking use-cases in the 30 highest-volume markets – in enough detail to produce a template that enables third parties to design practical solutions that meet the standard. The Working Group will also seek to isolate and explain exceptions to the standard approach, so industry participants at least understand why the standard cannot encompass every possibility. To deliver this outcome, the Group will not run a survey but will instead conduct a series of one-to-one interviews to establish the requirements of customers as well as service providers; work out why previous digital identity initiatives have failed, to avoid the same pitfalls; and make estimates of the costs, cost savings and day-to-day impact of industry adoption of the new standard. Once the standard is agreed, the Working Group will research and advise on the technology and third-party services that are available to make it a reality. Finally, with the standard and the technology agreed, the Working Group will embark on an educational programme of conferences and webinars to change industry behaviour.

**Digitization.** This Working Group aims not to digitize particular asset classes but to identify where and how digitization can improve operational processes - in terms of greater efficiency and reduced risk - by accelerating standardization and automation. Areas the Group has explored include customer due diligence at account opening, documentation required to obtain tax relief at source or reclaim tax withheld, the applicability of ML to corporate action and proxy voting notifications, elimination of manual processes and physical signatures, the standardization of APIs and the development and adoption of standards to improve the interoperability of blockchain protocols. Since all these issues are also the subject of investigation by other Working Groups, the Digitization Working Group is careful to restrict the scope of its activities to operational processes. The current focus of the Working Group is on privately managed assets, where the increased demand from investors identified in the 2020 *Future of Securities Services* paper ISSA co-published with Oliver Wyman and noted again at the 2022 ISSA Symposium, is not matched by an adequate infrastructure. The privately managed asset markets suffer from opaque and inconsistent pricing, lack of liquidity, prolonged settlement cycles and manual registration procedures, all of which inhibit scalability. This reduces investment activity and especially participation by non-institutional investors. To find a way to clear the obstacles, the Working Group examined the workings of privately managed asset markets in the United States, South Africa, Europe and Asia Pacific. In the October 2022 paper that followed, *Private Markets – Call to Action*, the Group argued that there are sufficient commonalities across the privately managed asset markets globally to develop a set of standards, controls and best practices that would lower costs, enhance efficiency and increase interoperability between various national and international infrastructures that have emerged or are in development. A second paper, where work is currently in hand, will be based on a RFP-style survey of 35-40 FinTechs offering a variety of services in privately managed asset markets. The intention is to interest these organizations in adopting the ISSA-sponsored standards, controls and best practices. A report and recommendations will be published in the third quarter of 2023. A third paper, on the development of secondary markets in privately managed assets, is under consideration. The long-term objective is to make privately managed assets an integral part of the securities services industry, so issuers and investors can incorporate the asset class into their portfolios seamlessly.

***Distributed Ledger Technology.*** The principal purpose of this Working Group, whose 109 contributors include FinTechs as well as traditional firms, is the production of educational and thought leadership materials for ISSA members engaged in the digital asset markets through the provision of digital asset custody and actual or potential engagement in the DeFi or Non-Fungible Token (NFT) markets, and whose business is or might be affected by Stablecoins, tokenized deposits or CBDCs. The Group proceeds on the basis that DLT adoption is not about competitive advantage but on collaboration to build eco-systems that can scale. Its educational publications include the annual “DLT in the Real World” survey produced in conjunction with ValueExchange, which queries members on their investments in DLT, and a podcast series in which ISSA members showcase their deployments of DLT. The current focus of the Group is a paper on digital asset custody, where investors and regulators see parallels between the asset safety questions asked in the aftermath of the collapse of FTX and those asked after the great financial crisis of 2007-08. That implies a similar regulatory outcome, which will be positive, but demanding, for the securities services industry. The digital asset custody paper, which is being prepared in conjunction with Deloitte and blockchain trade association GDF, aims to map the existing marketplace in digital asset custody services, describe how they fit into the broader digital asset and cryptocurrency markets, highlight and assess the current challenges, opportunities and risks presented by digital asset custody and make recommendations on best practices, standardization and inter-operability for providers of digital asset custody services.

***Domestic CSDs.*** The origins of this Working Group lie in the needs of the domestic CSDs that belong to ISSA. Unlike, say, the international CSDs (ICSDs) they are not entrepôts for global capital flows, but service exclusively a domestic client base and the custodian banks that intermediate international capital flows into the domestic market. Domestic CSDs also operate to national legal and regulatory requirements which calls for convergence on a set of international norms tend to ignore. The Working Group, by providing a forum in which domestic CSDs can share ideas and best practices, aims to bridge the gap between international standards and local realities. It has published two papers so far. The first, published in February 2022, itemised key learnings from remote working during the Pandemic. The second, published in March 2022, outlined the international standards domestic CSDs can follow to improve their business, operational and staff resilience, such as setting a two-hour recovery time objective when systems fail. Currently, the Working Group is working on standardizing the due diligence questionnaires issued to domestic CSDs by global custodian banks. Most of these questionnaires follow the templates published by AFME or the Association of Global Custodians (AGC), both of which are extremely long and ask broadly similar questions in different ways. Not every domestic CSD has the capacity to complete such lengthy documents. Yet global custodians also insist on adding bespoke questions, which require more time and money to address. Ironically, the questionnaires yield such vast amounts of unstructured data that the global custodians themselves struggle to absorb and analyse it all. Fortunately, the World Forum of CSDs (WFC) has published an on-line questionnaire that allows CSDs to submit AGC and PFMI disclosure reports to a unified template. This provides a foundation for the work of synthesizing multiple due diligence questionnaires. Industry consultants such as Thomas Murray and Myriad have also agreed to provide technological support. The immediate objective is to publish a paper proposing a list of questions crucial to perform an adequate due diligence on a domestic CSD and describing how they can be addressed most efficiently. Once the template is agreed, domestic CSDs can publish updated versions of a single questionnaire in January and June every year. The Working Group is also preparing a paper on best operational practices and processes for local markets that aim to attract foreign investors. The objective is to give domestic CSDs the opportunity to advertise the fact that they comply with the ISSA best practice standards.

**Financial Crime Compliance.** The origins of this Working Group date back to 2014, when the Office of Foreign Assets Control (OFAC) of the US Department of the Treasury fined Clearstream US\$152 million for apparent sanctions violations<sup>31</sup> and the Financial Industry Regulatory Authority (FINRA) fined Brown Brothers Harriman US\$8 million for alleged violations of AML rules in the trading of low-priced securities by foreign customers. The challenge set by these cases was how to retain the omnibus and commingled account structures seen as crucial to the commercial economics of the securities services industry. At the time, there was concern that regulators would impose segregated accounts to increase transparency in extended securities holding chains. The solution devised by the Working Group was the 17 Financial Crime Compliance Principles for Securities Custody and Settlement, first published in August 2017, and revised twice since then. The Principles were later supplemented by a Financial Crime Compliance Due Diligence Questionnaire for completion by sub-custodians, which is now widely used. An annual review of both the 17 principles and the due diligence questionnaire to take account of new developments remains an important part of the work of the Group. In 2023, for example, the Working Group is assessing the impact on the threat of financial crime of new technologies such as blockchain and AI, cryptocurrencies, the new digital asset classes and changes in the geopolitical environment. In fact, the Group is establishing a forum where ISSA members can share information about geopolitical effects on financial crime including, most obviously, sanctioned States, companies and individuals. Revised versions of the principles and the questionnaire will be published this year. An entirely new project is a risk assessment of other vehicles, such as alternative funds, as potential conduits for illicit asset movements. This will inform the construction of a new risk matrix covering both traditional and digital asset classes, which will outline their different risk factors. The Group is seeking product specialists rather than compliance officers, to improve its understanding of the potential impact of regulation on particular asset classes.

**ESG Standards in Securities Services.** This is one of two sub-groups (the other is the *ISO 2022 Standards and Securities Services* sub-group) of the established *Standardization Working Group*, whose overall goal is to increase efficiency and lower risk in the securities services industry by encouraging the adoption of standards and best practices. ESG requirements have emerged relatively recently as a major new business opportunity and novel source of risk for the securities services industry, so the first task of the Working Group will be to educate ISSA members on ESG concepts and how they affect each role in the lifecycle of an investment. This work will take the form of a short paper outlining the key ESG concepts, with a glossary to match, and a description of how they affect the various roles played by custodians, CSDs and others. An analysis of the impact of ESG requirements on the industry - including the problems they create, the solutions that are available, any gaps in current service provision and regional variations in requirements - will follow in a second document. The purpose of both documents is to clarify what exactly the securities services industry needs to do about ESG, in terms of helping buy-side clients, managing ESG risks within the industry and seizing any commercial opportunities which arise from ESG requirements.

**Future of Securities Services 2023.** This is a new working group, but one established to update the work of the *Future of Securities Services* paper ISSA co-published with Oliver Wyman in 2020, which made predictions about how the securities services industry would change over the next five (to 2025) to ten (2030) years. Maintaining this forward-looking stance on a rolling basis was identified as a priority at the 2022 ISSA Symposium. The Working Group will assess the validity of earlier predictions in the light of subsequent experience, monitor the emergence of other forces impacting the industry, and recommend changes to the five-to-ten-year outlook if necessary. The findings will be incorporated in a new document.

---

<sup>31</sup> See page 20 above.

**ISO 20022 Standards and Securities Services.** This is the second of the two sub-groups (the other is the ESG Standards in Securities Services sub-group) of the established Standardization Working Group, which exists to increase efficiency and lower risk in the securities services industry by encouraging the adoption of standards and best practices. Its origins lie in a June 2020 survey of both sides of the securities markets to assess whether there is a business case for adoption of ISO 20022, which standards bodies have promoted as the key international financial messaging standard. The survey discovered relatively low rates of adoption and an absence of a strong business case in all but a handful of service areas.<sup>32</sup> A new survey was issued in January 2023, and its results published in June 2023.<sup>33</sup> The new survey found that asset-servicing functions such as proxy voting and corporate actions have attracted more support for migration to ISO 20022. But asset managers retain their 2020 expectation that global custodians must solve any migration to ISO 20022 for them. And among CSDs and central banks, enthusiasm for ISO 20022 is confined mainly to Europe, which is significant because financial market infrastructures and regulators are the most effective drivers of adoption. This indifference to ISO 20022 continues to jar with the prevalence of manual processing, re-keying of data and use of free text fields in many service areas throughout the securities service industry, but both surveys have found most market participants remain comfortable with using previous standards (such as ISO 15022 or even ISO 7775) and work-around solutions to the problems ISO 20022 solves. It is clear that unless custodian banks, CSDs and regulators decide to drive migration to ISO 20022 it will not happen, because the business case has yet to be made for market participants dealing with other priorities. Nor are buy-side clients pushing them to move faster. However, the Working Group continues with its educational work on ISO 20022, publishing papers on the benefits of a common data model based on ISO 20022<sup>34</sup> and on how ISO 20022 provides a suitable basis for standardizing APIs<sup>35</sup> and establishing an ISSA Education and Resource Centre<sup>36</sup> to collate useful papers on ISO 20022 published by organizations other than ISSA. From 2023, the Working Group will discontinue its adoption survey. It will instead work with other market bodies to develop industry best practices and tools for the continued co-existence of ISO 20022 alongside ISO 15022, including improved interoperability between the two standards. The best practices and tools will aim to continue to encourage the eventual phasing out of ISO 15022 in favour of ISO 20022.

**Operational Resilience.** This is a new Working Group formed in response to the mounting regulatory emphasis on the operational resilience of banks and financial market infrastructures. In the near future, ISSA expects its members to be obliged by regulation to ask counterparts for evidence of operational resilience and to be asked to provide it themselves. The purpose of the new Working Group is to minimize the operational burden of providing this evidence by developing an ISSA operational resilience questionnaire comparable to the ISSA financial crime compliance questionnaire. This is being developed by two concrete steps. The first is to draw up a list of the key definitions used in operational resilience – a capacious term which covers the ability to cope successfully with financial, technology, cyber-security, business continuity and disaster recovery risks - so that the questionnaire can be based on a common, consistent lexicon or terminology. Secondly, the Working Group is also preparing an inventory of all operational resilience regulations currently in place or under consideration, from which an overall framework for the questionnaire can be devised. The questionnaire, which is currently in the design phase, will cover financial market infrastructures as well as banks.

<sup>32</sup> [https://issanet.org/content/uploads/2013/04/ISO\\_20022\\_Report\\_April\\_2021\\_Final.pdf](https://issanet.org/content/uploads/2013/04/ISO_20022_Report_April_2021_Final.pdf)

<sup>33</sup> [https://issanet.org/content/uploads/2023/06/ISO-20022-Survey-2023-Report\\_FINAL.pdf](https://issanet.org/content/uploads/2023/06/ISO-20022-Survey-2023-Report_FINAL.pdf)

<sup>34</sup> <https://issanet.org/content/uploads/2022/05/ISSA-ISO-20022-Benefits-Final.pdf>

<sup>35</sup> <https://issanet.org/content/uploads/2022/10/Interoperability-and-APIs-September-2022-FINAL.pdf>

<sup>36</sup> <https://issanet.org/working-groups/archived-working-groups/iso-20022-working-group-home/iso-20022-non-issa-paper-resource-centre/>

The first version for use will be published in the third quarter of 2023. However, the questionnaire will have to evolve in line with changing regulations. The Digital Operational Resilience Act (DORA) regulation issued by the EU, for example, comes into effect in January 2025.

**T+1 Impacts.** This new Working Group was formed in response to the global trend, encouraged by regulators, towards settling securities transactions on trade date plus one day (T+1). India moved to a T+1 timetable in January 2023. The United States is scheduled to adopt a T+1 timetable by May 2024, and Canada will follow suit. In the United Kingdom, an Accelerated Settlement Taskforce is at work, with a deadline of deciding on T+1 by December 2024. In Europe, AFME has established a T+1 task force. The impact on the securities services industry of shorter settlement timetables, especially across national borders, will be immense. Less time will put trade matching processes, cash management and foreign exchange under pressure. The risk of settlement fails, with concomitant cash penalties and potentially unlimited buy-in costs, will be higher, especially in less liquid assets or assets that are intrinsically hard to settle, such as exchange traded funds (ETFs). The time available for settling transactions across national borders will be truncated (the needs of non-domestic investors are largely ignored in official arguments for T+1 because they usually constitute a small proportion of overall transaction volumes). Lastly, the benefits to investors – reduced counterparty risk and lower margin, funding and liquidity costs, with reductions in the appetite to borrow cash or securities – could translate into revenue losses for the securities services industry. So the new Working Group will explore the impact on the industry of settling trades on T+1. Its aims will be to place different asset classes in an order of priority and to identify any mitigating actions that can be taken to reduce the risks, with a particular focus on cross-border transactions. The findings will be published in a paper, which will be used to educate the industry about the benefits and risks of moving to T+1. The paper, which will be published by October 2023, can also be used as the basis of a dialogue with public authorities about the challenges of transitioning successfully to a shorter settlement timetable. A longer-term ambition of the Working Group is to test technical solutions to the risks created by a worldwide move to settling trades on T+1.