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## SRD II and beyond

Panellists discuss how technology will help asset managers find a competitive edge and innovate their solutions

### Payments Infrastructure

Bringing payments infrastructure up to speed is key for maximising opportunities

### Clearing and Settlement

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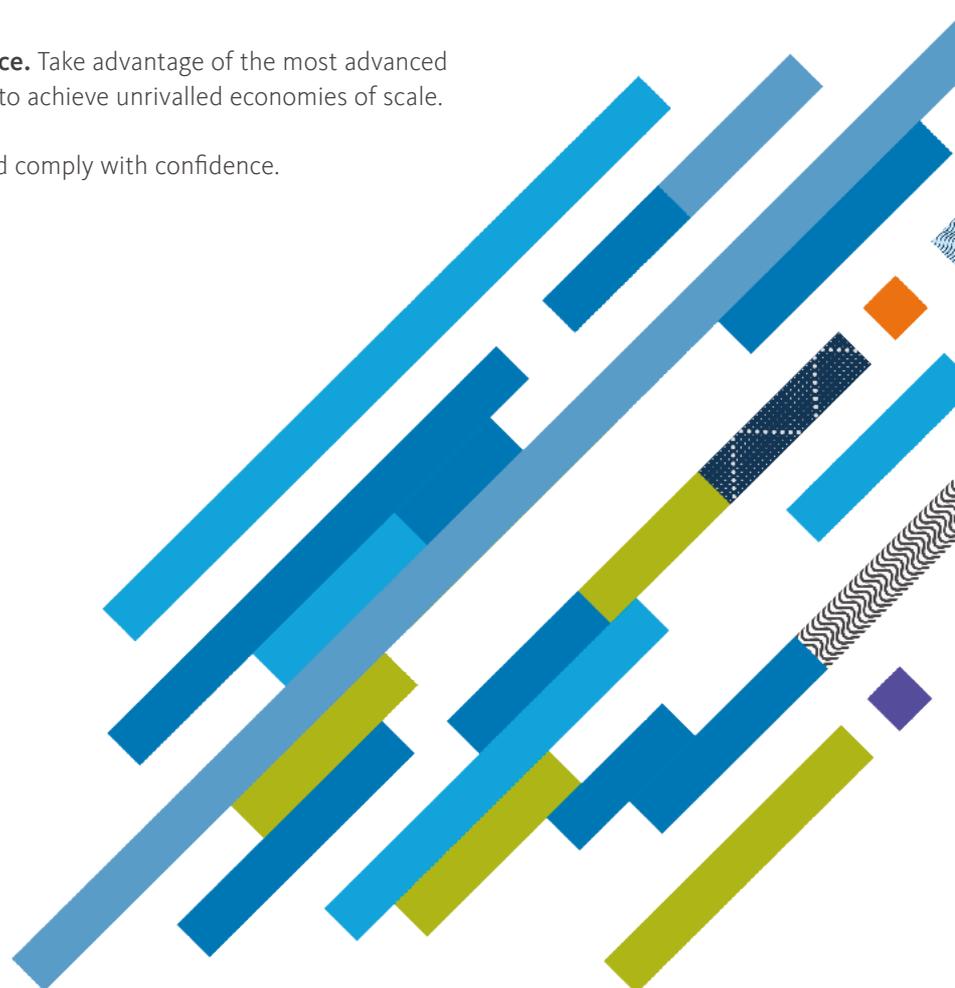
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# LEDGEREDGE SELECTS EXACTPRO

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**Clearing and Settlement**

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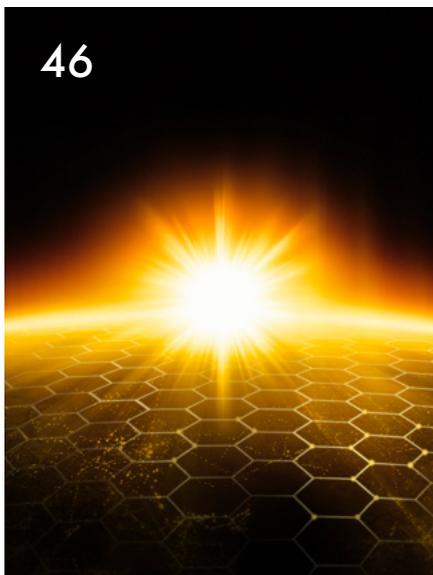
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**Group Editor: Bob Currie**  
bobcurrie@blackknightmedialtd.com  
+44 (0) 208 075 0928

**Senior Reporter: Maddie Saghir**  
maddiesaghir@blackknightmedialtd.com  
+44 (0)208 075 0925

**Senior Reporter: Jenna Lomax**  
jennalomax@blackknightmedialtd.com  
+44 (0)208 075 0936

**Reporter: Rebecca Delaney**  
rebeccadelaney@blackknightmedialtd.com

**Reporter: Carmella Haswell**  
carmellahaswell@securitiesfinancetimes.com

**Designer: James Hickman**  
jameshickman@blackknightmedialtd.com

**Associate Publisher: John Savage**  
johnsavage@assetservicingtimes.com  
+44 (0) 208 075 0931

**Publisher: Justin Lawson**  
justinlawson@blackknightmedialtd.com  
+44 (0)208 075 0929

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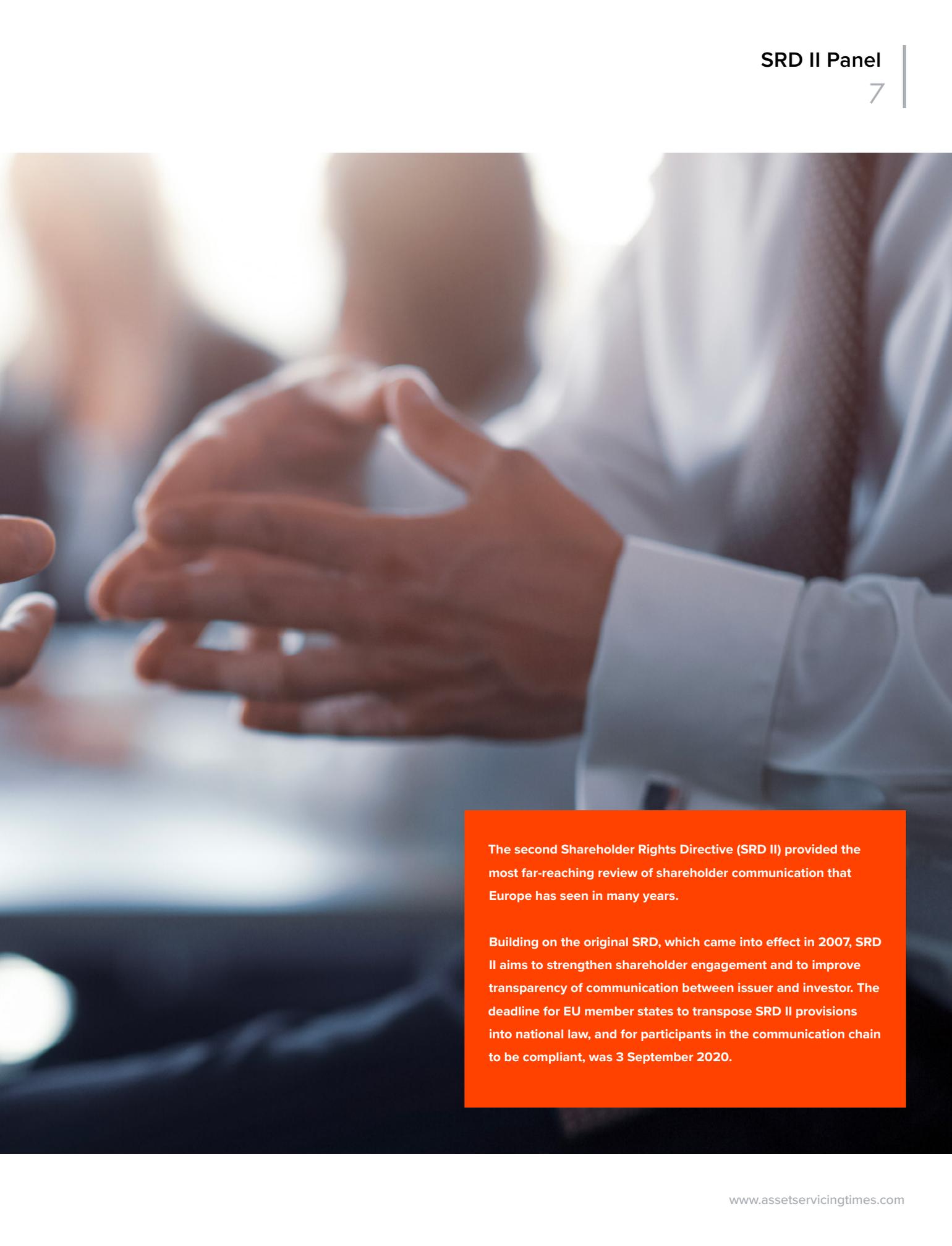
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Building Responsible Partnerships

# Investor Communication: SRD II and beyond

**The pandemic has shone a light on the need for accelerated adoption of new tools that will drive inorganic innovation and growth in the asset servicing space. Panellists discuss how technology will help asset managers find a competitive edge and innovate their solutions**



The second Shareholder Rights Directive (SRD II) provided the most far-reaching review of shareholder communication that Europe has seen in many years.

Building on the original SRD, which came into effect in 2007, SRD II aims to strengthen shareholder engagement and to improve transparency of communication between issuer and investor. The deadline for EU member states to transpose SRD II provisions into national law, and for participants in the communication chain to be compliant, was 3 September 2020.

### What level of readiness did you identify for SRD II's September 2020 deadline? How well have market participants adapted during the subsequent period?

**Maciej Trybuchowski:** There is a high degree of implementation of EU regulations on the Polish market, even in the absence of penalties (as some EU member states impose penalties).

We have implemented new solutions in partnership with participants of the Polish financial market because modifications to our systems affect KDPW participants' systems.

*“There is a high degree of implementation of EU regulations on the Polish market”*

**Maciej Trybuchowski, KDPW**

## Jacques Littré

**Lead business analyst, standards securities, asset servicing, SWIFT**

Global custodians were among the first to react, quickly followed by international central securities depositories (CSDs). However, in general there was a comparatively low level of readiness across the industry. The slow market reaction was due to several factors, including the additional focus on other European directives or regulations such as the Central Securities Depository Regulation (CSDR), and less communication about SRD II. The complexity of the directive itself, which had to be transposed to each European Economic Area (EEA) local jurisdiction, was also an important factor.

Additionally, it requires the mandatory implementation of ISO 20022 messages which, in contrast to ISO 15022, are not yet commonly used in the securities domain.

On a practical level, the September deadline for the regulation was ahead of November, the key month for annual releases as part of the SWIFT Standards Release yearly cycle. SWIFT made a new set of ISO 20022 messages available to customers in August 2020. Many institutions therefore had to modify their usual development timeline to accommodate the releases of the new ISO 20022 messages for SRD II.

*“The slow market reaction was due to several factors, including the additional focus on other European directives or regulations such as the Central Securities Depository Regulation, and less communication about SRD II”*



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***“The SRD II live date was somewhat challenging as some CSDs and intermediaries were less prepared than others.***

***For example, transpositions were not finalised and local requirements from certain member states were still unclear”***

**Mariangela Fumagalli, BNP Paribas Securities Services**

Out of several CSDs in Europe, KDPW was the only one to roll out ISO 20022 communication solutions supporting shareholder identification within the required time. The majority of the international intermediaries were not ready with ISO compliant communications. However, things have improved since September 2020.

**Mariangela Fumagalli:** Throughout 2019 and 2020, we worked closely with all impacted parties (issuers, CSDs, custodians) and several industry associations (such as the Association for Financial Markets in Europe) to ensure we were ready for SRD II on 3 September 2020.

Nevertheless, the SRD II live date was somewhat challenging as some CSDs and intermediaries were less prepared than others. For example, transpositions were not finalised and local requirements from certain member states were still unclear.

Adaptation in the subsequent period did not prove to be as fast as expected, with some participants in the chain still adapting even today to comply with SRD II requirements.

**Demi Derem:** SRD II created an entirely new responsibility for many firms and the global pandemic made preparing for this new regulation

even more challenging. Firms were forced to balance becoming compliant alongside having to adapt to a whole new way of working.

In terms of the level of readiness in advance of SRD II go-live, we witnessed varying approaches and levels of preparation from impacted intermediaries. Some organisations focused on their own compliance, while others looked up and down the investor communications ecosystem for help.

Additionally, many firms needed convincing that they were even impacted, such as financial intermediaries incorporated outside the EU that deal in EU securities.

Post-SRD II implementation, a number of market challenges remain — principally focused on latency in the adoption of industry messaging standards and differences in market transposition to local law.

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***“SRD II created an entirely new responsibility for many firms and the global pandemic made preparing for this new regulation even more challenging.***

***Firms were forced to balance becoming compliant alongside having to adapt to a whole new way of working”***

**Demi Derem, Broadridge**

All these items have in some way impacted the expansion of corporate governance services and arguably introduced more complexity in the short-term.

Despite this, we believe that the industry has largely done a remarkable job to embrace SRD II.

## What key benefits has SRD II delivered in terms of improving the efficiency of investor communication and standards of shareholder engagement?

**Trybuchowski:** Polish public companies have filed 232 shareholder identification requests with KDPW since 3 September 2020.

The number of requests represents around 60 per cent of GPW-listed domestic companies. According to available information, some of those companies have offered loyalty programmes thanks to their access to shareholder identification.

**Fumagalli:** SRD II is expected to revolutionise the custody business for investor communications. Custodians are going to become more of a conduit for conversation between an issuer and their investors. SRD II has also promoted the digitalisation of communication between shareholders with the introduction of new machine-to-machine standards. There is still a long road ahead but the first steps have been taken.

### Demi Derem

General manager, international investor communication solutions, Broadridge

SRD II has been pivotal in encouraging firms to engage with their shareholders in new and efficient ways. The scope of the regulation mandates the provision of voting and disclosure services by a new, far broader range of intermediaries including brokers, wealth managers and core infrastructures. This has helped to extend shareholder democracy and our estimations suggest that this has enabled around 100 million new shareholders' voices to be heard for the first time.

The adoption of industry standard messaging and operational performance standards, as defined in SRD II, has been a catalyst for enhancing efficiency in the communication lifecycle, bringing issuers and investors closer together.

Our clients are also embracing environmental, social and governance (ESG) benefits. The expansion of voting services has naturally opened the door for increased transparency, shareholder empowerment, and with better and more widespread governance. Virtual shareholder meetings are also reducing the physical impact to the environment. There is less carbon footprint, because of fewer people travelling to issuer meetings.

*“The adoption of industry standard messaging and operational performance standards, as defined in SRD II, has been a catalyst for enhancing efficiency in the communication lifecycle bringing issuers and investors closer together”*



## What challenges have stakeholders (such as issuers, custodians, institutional investors, asset managers, and proxy advisors) encountered in implementing these SRD II requirements?

**Fumagalli:** One challenge was the lack of time to adapt existing procedures and market specificities to the new SRD II requirements. At least in the majority of cases, it was especially difficult when the transpositions, which should have been ready by 10 June 2019, were delivered late.

Additionally, the level of readiness greatly varied for some CSDs and intermediaries. Some participants in the chain are still adapting their processes to fully comply with SRD II requirements.

Finally, the co-existence of national laws conflicting with SRD II is another key challenge including, but not limited to, the inconsistency in the national definition of shareholder and the lack of clarity on the securities in scope of SRD II.

**Litré:** Differences in legal frameworks across the 27 EEA countries in which SRD II was transposed presented a challenge. In particular, the definition of 'shareholders' under national laws varies, which leads to different interpretations of the directive. Furthermore, in relation to the requirements around Shareholder Identification Disclosure (SID), these have varied in the context of specific country laws.

For example, a share quantity threshold is permitted in some countries but not others, while the provision of additional information on shareholders (such as date of birth and location) is also not a blanket requirement. Conversely, in non-EEA countries, where there are no SRD II penalties imposed, it has not always been clear what the shareholder disclosure obligation is.

The extensive nature of the requirements was also a hurdle. As above, they require the adoption of ISO 20022 for SID, which is also recommended for general meetings. Within the specific requirements for SID, these include exchanging critical confidential data on shareholders with many new counterparties.

The most challenging part of the requirements lies in verifying the source of the request before being able to share the sensitive data.

Also in relation to data, there has been a lack of clarity around how to communicate on the date from which shares have been held. Last, but not least, for some countries one of the biggest data issues has been the process of consolidating the shareholder identification data received from all the intermediaries in the custody chain by the response recipient.

**Derem:** Implementation was certainly more complex for multinational firms, particularly as different countries across the EU found themselves at different stages of implementation.

This disparity in adoption also had a knock-on effect on CSD adoption of the required ISO 20022 messaging for issuer communications.

Also, for nearly all the European markets, shareholder identification was a relatively new process, and for intermediaries operating in cross-border contexts, meeting the daily response deadlines for these shareholder identification requests was made trickier as a result of time zone differences.

### SRD II imposed the following obligations on financial intermediaries:

Intermediaries must fulfil shareholder disclosure requests from issuers, enabling the issuing company to identify its shareholders

Intermediaries must transmit meeting information 'without delay' between companies and shareholders via the relevant intermediary chain

Intermediaries must facilitate the exercise of shareholder rights, including voting rights

## What steps has your company taken to support these requirements? How will these objectives shape your development strategy over the coming 18-24 months?

**Derem:** At Broadridge, we have developed a range of technology solutions that manage the end-to-end proxy voting process across all distribution channels — from project management, mailing and solicitation to voting tabulation. Our solutions enable clients to meet all governance obligations across all EU markets and provide a seamless and secure shareholder experience.

*“Our solutions enable clients to meet all governance obligations”*

**Demi Derem, Broadridge**

## Charifa El Otmani

### Interim head of securities strategy, SWIFT

SWIFT and the Securities Market Practice Group (SMPG) have worked together to provide the industry with various ISO 20022 messaging solutions covering all minimum requirements around implementing regulation.

The messages are available on the ISO website and on the SWIFT MyStandards platform. This work has included developing and delivering a new set of ISO 20022 messages to support the SID flow. We have also continued with maintenance of the existing ISO 20022 messages to support general meeting flows, all compliant with SRD II requirements.

Alongside SWIFT’s FIN messaging service, which enables the secure and reliable exchange of MT messages in store-and-forward mode, SWIFT has introduced FINplus, a many-to-many store-and-forward messaging service. FINplus enables financial institutions to exchange ISO 20022 messages for securities and payments in a secure, cost effective, and reliable way.

This is part of our strategic approach to supporting ISO 20022 adoption. The above messages were made available on the FINplus service in August 2020, enabling the industry to start using them by the September 2020 deadline for SRD II.

*“Alongside SWIFT’s FIN messaging service, which enables the secure and reliable exchange of MT messages in store-and-forward mode, SWIFT has introduced FINplus, a many-to-many store-and-forward messaging service”*



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***“As a major European custodian, BNP Paribas Securities Services continues to push for further automation in the transmission of information between issuers and shareholders, ensuring we deliver what SRD II has set to achieve”***

**Mariangela Fumagalli, BNP Paribas Securities Services**

It is often said in jest that Europe is not a single country. Europe is of course a collection of sovereign nations trying to work under an agreed regulatory and legal framework. Nonetheless they compete and have different views on local market infrastructure. Broadridge's corporate governance solutions are tailored to the specific needs of each market. For example, SRD II compels the retail segment to offer an online and on-demand service to all investors. In response, we focused on protecting the end-client experience by integrating our voting solutions to branded front-end client portals. We developed functional multi-channel e-voting solutions, including mobile apps. We knew that this would be especially important to retail banks, their investors and younger generations who prefer the convenience of this method versus a PC-based login.

A key aspect of our ongoing focus will be driving market advocacy in areas of required improvement, not just for Broadridge but for the benefit of all participants in the investor communications ecosystem. Our focus here is on local market counterparty digital connectivity, transparency for issuers and investors, and improving the speed and quality of issuer communications.

**Fumagalli:** As a major European custodian, BNP Paribas Securities Services continues to push for further automation in the transmission of information between issuers and shareholders, ensuring we deliver what SRD II has set to achieve.

We developed and delivered proactive and flexible solutions to help our clients secure a smooth and secure transition through change. Our IT infrastructure was adapted to comply with new messaging standards and processes as of SRD II live date on 3 September 2020.

We also worked with various industry associations to define new market standards and market practices for shareholder identification and general meetings, to ensure a harmonised approach across all member states.

**Trybuchowski:** We are the first intermediary and disclosure receiver to offer dedicated shareholder identification applications. We have upgraded corporate actions functionalities in the general meeting application to meet notification message requirements.

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***“We are the first intermediary and disclosure receiver to offer dedicated shareholder identification applications.***

***We have upgraded corporate actions functionalities in the general meeting application to meet notification message requirements”***

**Maciej Trybuchowski, KDPW**

As a reporting intermediary in the intermediary chain of shareholder identification (where we are not the home CSD), we report in accordance with the standards, notably using ISO 20022 messages transmitted via the SWIFT network.

## What requirements has SRD II presented in terms of the need to adapt message infrastructure and technology?

**Fumagalli:** A key objective of SRD II is to improve communication between issuers and their shareholders. Increased dialogue needs to be handled according to standards of communication across the custody chain in a machine-readable and straight-through process manner to ensure the messages and information are exchanged ‘without delay’ and according to specific deadlines and content. The purpose is to reassess the existing communication channels as well as the existing messaging standards. ISO 15022 messages were not compliant with SRD II requirements for general meetings and shareholder identification. As a result, we worked with SMPG to update the existing ISO20022 messages for the general meeting and design new ISO20022 messages for shareholder identification.

**Derem:** A new process introduced as part of SRD II is that voting receipts and confirmation that votes have been cast and counted must be sent directly to investors and intermediaries. Intermediaries must also now be able to receive, process and send electronic machine-readable messages.

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*“The purpose is to reassess the existing communication channels as well as the existing messaging standards”*

**Mariangela Fumagalli, BNP Paribas Securities Services**

To help firms navigate the new regulation, SMPG recommended the ISO 20022 message format. Existing messages including ISO 15022, and even the older proxy voting ISO 20022, are not compliant. The new ISO 20022 format has been updated with 32 new elements to ensure that it fulfils all requirements of SRD II.

## Has the industry been willing to make the necessary investment and adaptations?

**Fumagalli:** The industry tried very hard to be ready for SRD II. There was heavy investment in terms of both technology and infrastructure to migrate and develop the necessary processes to adapt to SRD II, including but not limited to the record implementation of new ISO 20022 messages for shareholder identification and general meetings.

**Trybuchowski:** The SRD II provisions governing shareholder information of public companies have been implemented in Polish law in an amendment of the Act on Trading in Financial Instruments. The legal amendment has supported mandatory SRD II alignment of capital market participants in the absence of penalties.

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*“The SRD II provisions governing shareholder information of public companies have been implemented in Polish law in an amendment of the Act on Trading in Financial Instruments”*

**Maciej Trybuchowski, KDPW**

## What barriers remain to meeting the SRD II objective of supporting straight-through processing communication in 'electronic machine readable format'?

### Maciej Trybuchowski

CEO, KDPW

One of the barriers, which incidentally is contrary to the requirements of the SRD II implementing regulation, is to use BIC instead of a legal entity identifier (LEI) to identify reporting intermediaries or account operators.

Another issue is the authorisation (RMA) of SWIFTNet communication connectivity. For instance, it is not clear who should initiate RMA, which may lead to misunderstandings and require additional clarification where intermediaries follow diverging practices.

The SRD flag is occasionally missing in shareholder identification requests of certain public companies (where an issuer files a request with a CSD other than KDPW). In the absence of the flag, KDPW participants may not know whether the request concerns a public or a non-public company.



*“The final version of the market practices for general meetings was not completed until the end of July 2020, which meant intermediaries effectively only had just over one month to adopt the messages and their related processes before the SRD II deadline”*

**Demi Derem, Broadridge**

**Fumagalli:** The adoption and adaptation of ISO 20022 messages across the chain is needed. Harmonisation and standardisation of market practices and eliminating historical and paper-based processes such as the maintenance of powers of attorney will also help.

**Derem:** As I referenced above, SMPG introduced a number of revised and new ISO 20022 messages to facilitate meeting notifications and shareholder voting. The final version of the market practices for general meetings was not completed until the end of July 2020, which meant intermediaries effectively only had just over one month to adopt the messages and their related processes before the SRD II deadline. Consequently, there has been latency in the industry’s adoption of the new messaging and standards with many intermediaries — including issuers, issuer agents, CSDs and sub-custodians — still in the process of implementing compliant solutions.

If the market adopts the recommendations provided by SMPG over messaging standards, many of the current obstacles preventing straight-through processing (STP) will be removed.

## What are the major lessons learned over the past 12 months?

### Mariangela Fumagalli

Head of global asset servicing product and custody regulatory solutions,  
BNP Paribas Securities Services

There is still a long road until full compliance is achieved, but the industry has proven with SRD II and CSDR that it is capable of working together to deliver standards and push for better processes.

The pandemic has also proven new ways of working are possible.

Regulators could adapt and deliver changes that allow for general meetings to take place virtually.

Additionally, there are still areas that need further enhancement to allow for more effective investor communication, namely by making national laws eliminate barriers to efficient communication.



*“Companies do not necessarily require the identification of all shareholders, in particular natural persons holding their shares in view of the GDPR requirements”*

**Maciej Trybuchowski, KDPW**

**Trybuchowski:** Companies do not necessarily require the identification of all shareholders, in particular natural persons holding their shares in view of the GDPR requirements. Hence, they expect the scope of reports to be customised; in particular they need the scope to be narrowed down to legal entities alone. In our opinion, it seems unnecessary to report general meeting outcomes (text of resolutions) in ISO 20022 messages.

**Derem:** We have seen many firms realise the importance of strengthening their ESG credentials, and the implementation of SRD II has enabled firms to do this. Firms have also learned that failing to comply with practices that enhance shareholder democracy will not only face financial consequences in certain markets but reputational ones too.

The European Commission is set to review SRD II's effectiveness and to revise the directive; although the timeline for this is not 100 per cent certain. It could be as soon as late 2022.

Firms that remain focused on SRD II compliance, while being mindful of possible upcoming changes, will benefit. Allocation of resources and securing development time within their organisations will be essential.

## What are the primary barriers to efficient investor communication that remain in the longer term? What are the priorities for addressing these?

**El Otmani:** Points formalised by the SRD II joint industry steering group, of which SWIFT is part, have helped to highlight some of the key barriers to efficient investor communication. These include the current ongoing volume of non-SRD II requests, which require manual processing, also exceeding the volume of SRD II requests, which can be automated. There is a question around how the latter can transition to become SRD II requests. Similarly, the industry continues to handle non-compliant SRD II requests (for example based on ISO 15022) which also require manual processing. The industry is currently contending with the possibility that future market participants will refuse to process SRD II based requests in ISO 15022 format and needs to find a way to ensure that SRD II-based requests are issued in ISO 20022 format.

As mentioned previously, the lack of harmonisation across the legal frameworks of participating countries is also a barrier. A stated objective of SRD II implementing regulation and market standards is to create common pan-European operational processes. However, a few country laws stand in direct opposition to this, for example in the area of defining the process for responses. Similarly, for securities issued in countries where national transposition does not give a clear answer regarding who should be identified as the shareholder, this brings the risk for intermediaries of either over- or under-disclosure. As a result, the industry needs to consider a common process for monitoring and assessing compliance with SRD II rather than national market practices being developed, which could lead to further fragmentation.

**Trybuchowski:** The primary barriers, especially in the cross-border context, include the fact that SRD II and its implementing regulation provide no definition of 'shareholder'. As a result, the industry is uncertain how to report shares recorded in intermediary accounts of different levels and degrees of aggregation. It also seems necessary for the regulation to apply to companies listed on alternative trading venues. At this time, the regulation only covers exchange-listed companies. Moreover, companies' right to rectify shareholder identification details should be clarified.

**Fumagalli:** Addressing the differences in national laws will help harmonise the use of messages and help to create a true European

### *"The lack of harmonisation across the legal frameworks of participating countries is also a barrier"*

**Charifa El Otmani, SWIFT**

landscape where a sustainable corporate governance is supported by the right processes.

A thorough assessment of the impact of SRD II on custody processes needs to be conducted to further clarify and harmonise rules governing the interaction between investors, intermediaries and issuers and to identify what national barriers to the use of new digital technologies in this area still exist.

Additionally, the much-awaited harmonisation of the shareholder definition across member states will further facilitate cross-border engagement.

All of the above have already been identified by the European Commission in their Capital Markets Union Plan.

**Derem:** The primary barriers to efficient investor communications are the full industry adoption of ISO 20022 and the harmonisation of market practices and legal definitions — such as 'shareholder' — across member states.

At Broadridge, our priorities focus on satisfying our clients' needs and wants. We are prioritising development around the delivery of machine-readable 'golden copy' issuer announcements to remove processing risk and reduce cost, along with counterparty digital connectivity to help improve reconciliation processes for up and down stream intermediaries. This will create greater transparency for both issuers and investors by providing end-to-end reporting tools and improving voting deadlines for the benefit of all institutional and retail investors. ■



# Need for speed

Bringing payments infrastructure up to speed is key for maximising the opportunities from a real-time payments world

Maddie Saghir reports



Over the past 12 months there has been an increase in countries implementing real-time payment systems. Having the correct, up-to-date, infrastructure and technology in place is key to utilising the opportunities in this space. Real-time enables payments to be settled almost instantaneously and can offer enhanced visibility into payments. Asset Servicing Times finds that this can be by enabling better cash management and by helping businesses better manage day-to-day operations by improving liquidity. With the US and EU set to mark their four-year anniversaries for real-time payments and SEPA Instant Credit Transfer scheme (SCT Inst) respectively, the popularity of these programmes is reflected in the fact that global real-time payments transactions increased by 41 per cent in 2020 compared to the previous year.

Industry participants have noticed significant acceleration of digitalisation throughout the pandemic, as financial institutions have had to turn themselves into remote organisations with a focus on straight-through processing for a wider range of consumer and business payments.

Carlo Palmers, head of market infrastructures, SWIFT, the global provider of secure financial messaging services, says: “The biggest trend in payments is the shift towards instant settlement and 24x7 operation.”

“This is rapidly becoming the norm in some domestic markets, where use of physical cash is increasingly rare. And we are seeing movement toward real-time in cross-border payments as well.”

## Accelerating to real-time

Real-time payment systems provide multiple benefits. Srinivas Chintakrinda, senior director, product management, Volante, explains: “Not only will they give consumers and businesses much more choice in the way they make payments, they will also speed up the transfer of money to ultimately help support the type of instant, 24x7 commerce necessary in a post-pandemic world.”

SWIFT observes that many countries are developing real-time payment instant schemes in response to customer expectations for the same seamless, real-time experience for payments that is taken for granted in the digital economy, whether watching a film on demand or ordering goods with one click.

“Many of the existing domestic schemes are also broadening their scope now to process transactions from abroad. The benefits are many, particularly for businesses, which benefit from immediate availability of funds with low transaction cost,” says Palmers.

Meanwhile, Ainsley Ward, vice president of payments solutions, CGI, highlights that there is inherent value in being able to keep hold of your cash until the very last moment. He adds that real-time systems allow businesses to work their capital more effectively and manage cash flow more efficiently.

Andrew Bateman, executive vice president, buy-side solutions at FIS, says: “The on-demand nature of real-time could mean a chance for forecasting processes or daily cash processes, and they would need the ability to adapt and respond to changes in balances throughout the day.”

There is a lot of work being done on integration and Bateman believes this is where there is an opportunity to be disruptive, with many providers focused on application programming interfaces (APIs) and streamlining connectivity. Once you get that right, according to Bateman, it makes everything else easier. Technology is enabling the acceleration of real-time payment and market participants have seen a rapid increase in the number of corporate treasuries embarking on digitisation projects supporting the digital end-user experience. Getting payments and infrastructure ready and up-to-speed seems critical to be best positioned to maximise the opportunities from a real-time payments world.

“We have a number of insurance customers looking at using real-time payments through our payment factory solution. In this case, a policy holder making a lower-value claim could be assessed and settled in real time,” comments Bateman.

For example, last year FIS completed a project with an insurance company wanting to settle real-time claims for its business in Asia. FIS used the local instant payment network to initiate a real-time payment into the client’s account.

Another example is the collaboration with SWIFT and the financial industry. Palmers says: “The world is changing fast and developments such as artificial intelligence (AI), machine learning and digital currencies are all set to have a major impact on financial services. SWIFT is playing a role in assessing emerging technologies.”

The group is currently working with the global financial community to harness these for innovative solutions that can solve industry challenges, operate at scale in payments and transform the services that the SWIFT community offers its customers.

The ability of APIs, for example, to communicate and sync data between multiple parties in real-time makes the technology critical to the digital transformation of financial services.

Additionally, banks are moving their payments processing structure to the cloud. CGI, for example, has been at the forefront of cloud-based payments for a few years. CGI put its first bank live on a dual-cloud Azure and AWS solution in 2019 and has seen growing demand that accelerated with the onset of the pandemic.

Not only do banks get flexibility in deployment through the cloud, they are able to reduce infrastructure costs through resource elasticity and gain significant advantages from automated patching services and self-healing technology.

Inherently deploying payment processing to the cloud increases resiliency and helps to deliver high availability without the need to own major data centres in numerous locations.

## Challenges

The advantages of real-time payment do not come without drawbacks. While utilising the cloud for a payment processing structure can be beneficial, this requires enhanced technology that is designed to leverage cloud capabilities and not everybody has the right technology in place just yet.

Interfacing with a legacy mainframe can be difficult technically; moving to the new ways of working with cloud can be challenging for teams that have been working with the same systems for more than 30 years.

Palmers comments: “Many banks’ payments processing applications operate on older generations of technology, and are embedded in complex integrations with the rest of the bank.”

“They often still work well, and they are risky and costly to change, so despite the advantages of cloud many banks are yet to fully embrace it for all payments.”



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And it is not just the behind the scenes considerations — such as ensuring the correct technology for the cloud is in the right place — cybercrime is a major challenge in this area too.

Volante's Chintakrinda explains: "Any time that a new way to move money is invented, there will inevitably be fraudsters and bad actors attempting to use those mechanisms to serve their interests."

While the risk is lowered because real-time payments systems have been specifically designed to prevent some of the more common types of fraud, there is a technological risk for banks if they do not properly plan for the transition to real-time payments. For instance, when SEPA launched, many banks in Europe decided to start with payment receipt but when it came to sending payments they found they could not meet the 24x7 immediate clearing service level agreements of instant payments. As a result, they had to redo their technology approach.

Chintakrinda suggests this is a mistake that could have been avoided by testing send and receive at the same time, even if both were not rolled out immediately to their customers. This is particularly important with November 2021 looming as a deadline for participating in TARGET Instant Payment Settlement (TIPS).

SWIFT is currently exploring how machine learning could help identify fraudulent payment instructions. It is also examining AI-based anomaly intrusion detection systems that could learn and model users' normal behaviour patterns on the SWIFT network over time and alert the system administrator when anomalous behaviour is detected. There are many other opportunities for AI to help streamline processes and reduce risk, as well as dramatically improve the customer experience.

SWIFT is building an in-house machine learning sandbox environment that will provide a highly secure hub where the group can train and evolve machine learning models under the strictest data privacy conditions.

"This provides important opportunities for the development of advanced technologies that can improve automation and compliance processing and provide insights into customer behaviour," says Palmers.

Regulation is another area that poses challenges. The industry needs support from regulators when it comes to real-time payments. Experts say this is the case in Europe. While the protections that Payment Services Directive (PSD2) and General Data Protection Regulation

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***"Any time that a new way to move money is invented, there will inevitably be fraudsters and bad actors attempting to use those mechanisms to serve their interests"***

(GDPR) have placed can seem a little onerous for banks to manage, ultimately they are creating a low-cost, secure and fair payments market that works for all. Outside of the EU, however, things are a little murkier.

In Canada there is large demand from the corporate sector to create access models similar to those in Europe, yet little regulatory movement as parliamentarians continue to deprioritise and stall legislation.

According to Ward, this is driving the adoption of parallel systems and the splintering of a market that needs standardisation and centralisation to achieve economies of scale.

In the US, where regulators had initially taken a hands-off, market-driven approach, pressure applied by lobbyists has resulted in the creation of FedNow and acceleration of the programme.

"Ultimately, as banks bear the cost of both creation and depreciation due to real-time payments they will often push banks against introduction, but ultimately if they were to seize the opportunity it could be massively beneficial for them and their clients. Proper regulation makes sure that this happens, rather than waiting for seasoned bankers to do the right thing," Ward comments.

The future of payments is certainly digital. Real-time payments provide plenty of opportunities, but having the right technology in place is crucial. Cloud makes it much easier to facilitate real-time payments, as do the increased digitalisation of straight through 24x7 payments. For banks, it will be important to modernise their technology if they want to move quickly in these areas and compete with more agile fintechs. ■

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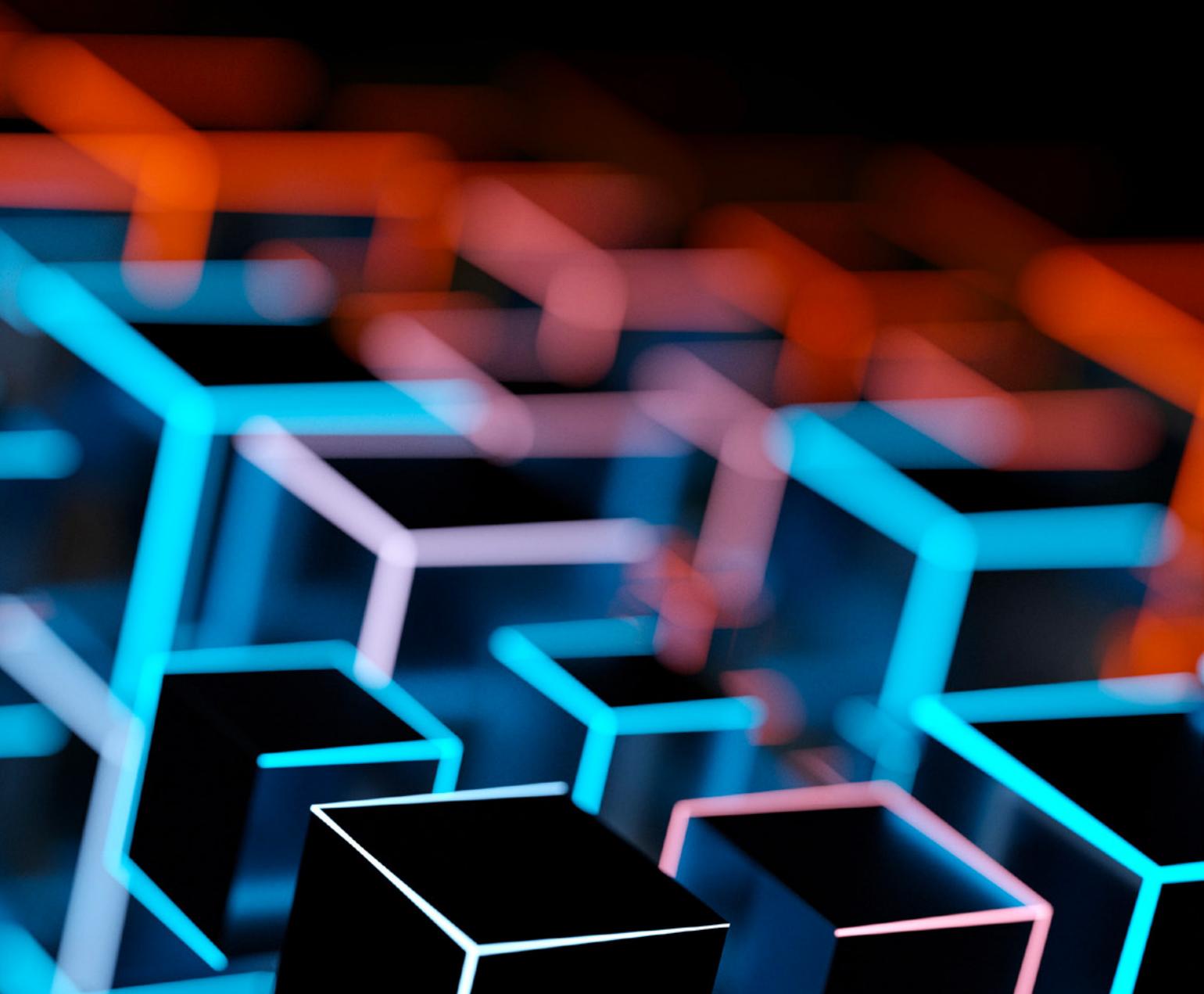
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# It's a long way to the top if you wanna digitise

Digitisation is one of the key ingredients to innovation in asset servicing, but to reach the nirvana state of innovation, asset managers must overcome a number of hurdles

Maddie Saghir reports



Innovation opens the door to new opportunities and can help asset managers foster a competitive advantage over their competitors. Digitisation — converting information into a digital format — is a crucial element of innovation and many firms in the industry are working towards this.

The COVID-19 pandemic has accelerated the adoption of new tools that are set to drive inorganic innovation and growth in the asset servicing space, allowing industry participants to build better products and services for their customers.

“Many asset managers are already on the right path with the digital transformation programmes already implemented — from upgrading core operating platforms to becoming cloud-natives and reinventing the front-office,” observes Jason Baldesare, vice president, strategy and solutions, management, capital markets, FIS.

He adds: “COVID-19 sounded the alarm to accelerate our digital experiences. While executives were not asleep at the wheel, their transformation programmes were too incremental to keep pace with the level of change brought by the pandemic.”

It is important for asset managers to digitise and innovate their products and distribution models because investors of all shapes and sizes, from retail to the largest institutional investors and everyone in-between, expect a highly digitised experience. This can range from initial interaction with the asset manager in sales and onboarding, to reviewing portfolio performance and making decisions on where to invest next. Both retail and institutional investors have the expectation that the products they are buying are simple to understand and that the data is transparent and easily accessible for them to make decisions.

According to Baldesare, with competition increasing, the rise of retail brokerage accounts, and institutional investors favouring the most predictable and cost-effective route to alpha, managers must identify ways to build product appeal and retain investors. A robust digital experience is a key driver.

There are many other key drivers of innovation. Asset managers face an array of challenges — from regulatory scrutiny to changing client expectations and working cultures — that require them to innovate in ways that ensure their competitiveness and even survival in the digital era.

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***“Asset managers are increasingly realising the need to embrace advanced technology and scalable connected models that unlock the use of data and improve the relationship with clients”***

Ovidiu Campean, global head of product management, Tora, suggests that the biggest priority for the asset manager right now is unifying processes and technologies with a view of reducing operation burdens and cost to free up resources to focus on alpha generating strategies.

“Asset managers are increasingly realising the need to embrace advanced technology and scalable connected models that unlock the use of data and improve the relationship with clients,” says Campean.

Adam Cottingham, corporate actions, SmartStream, comments: “A lot of asset managers are dealing with legacy system challenges and manual processes. They are looking to decrease manual processes and increase automation. Operationally critical processes like corporate actions are receiving attention in both large and small firms because they need to be digitised.”

## **It is a long way to the top if you wanna digitise**

Although the drivers for innovation are clear, there are barriers in the way.

Many new technologies exist to make a digital transformation for asset managers more of a reality than even just a couple of years ago but challenges still remain.

For example, FIS' 2021 Readiness Report, published in July, found that only 35 per cent of firms surveyed feel their data integration capabilities are well equipped to handle future client demands.

According to Baldesare, there are several measures asset managers can take to mitigate the risks and challenges of implementing new technologies in the face of increasing competition, client demands, and regulation.

Firstly, he suggests, they need to develop a comprehensive digital and advanced technology strategy. He elaborates: "Without this, firms will make siloed or misinformed decisions about technology choices and areas for internal investment, and lack the playbook needed for successful implementation. A strategy also supports that digitisation becomes everyone's responsibility, not just the chief digital officer."

"Secondly, asset managers need to embrace the cloud — this is more than a destination for data and applications to drive down costs or to create elasticity."

"While those are remarkable attributes, it is also a platform for enterprise business transformation. Cloud platforms can deploy new digital technologies in days rather than months and can support analytics and tools that would be too costly or unattainable with traditional platforms. The cloud is a potential game-changer for how asset managers and other financial services institutions will operate in the future," Baldesare comments.

Finally, they need to focus on talent. Baldesare highlights: "For asset managers, talent in the front-office — the ones generating the alpha for clients— remains a top priority. However, managers cannot ignore the talent needed to successfully implement a digital transformation."

Neil Sheppard, global head of business development asset servicing at SmartStream, says: "The barrier we see is an attitude towards change. People have manual processes but are using elements of a system that have been there for a while. Some people are scared of integration; so our job is not only to quote past examples of our track record, but to demonstrate how automation — when you look at our solution as a platform — works."

SmartStream helps clients re-process and re-engineer to really understand their business and even potentially set up their business slightly differently, with automation as the backbone.

## If you want innovation

If you want innovation, technology is key. Asset managers want technologies that are open and scalable. The technologies that are driving the digital experience are in the areas of sales and distribution, account onboarding, and front-office portfolio analytics and decision making. For example, digitalisation can speed up the decision-making process and allows an organisation to reduce time for the task at hand. It can mean relocating staff to different roles.

But what types of technology can create solutions for a competitive edge?

Tora's Campean suggests a cloud platform enhanced with application programming interface (API) connectivity is the right approach since it is flexible and secure but also keeps down cost while firms focus on their growth.

Weighing in on this, FIS' Baldesare adds: "APIs have long been used within financial institutions to exchange data and request certain functions. However, with the rise of RESTful APIs, communication between applications has become simple and efficient, allowing data and digital solutions to become easier to implement."

Additionally, as advanced technologies like machine learning and artificial intelligence (AI) have matured, more applications of these solutions are being observed within the asset management space.

According to Baldesare, whether it is robo-advising, or advanced portfolio modeling and decision making, the additional data and insights that can be provided by these solutions are helping investors and asset managers make better decisions and more effectively manage risk.

Vincent Kilcoyne, executive vice president, SmartStream, notices there is an interesting bifurcation within the buy-side community in terms of the adoption of innovative technologies.

He observes: "They do look at the adoption of advanced and innovative technologies, such as AI, when it comes to product innovation, investment strategy innovation, but not in operational and automation. The buy-side is not focusing on that, they are focusing on the search for alpha and the use of innovative technologies in that



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search for alpha. Meanwhile, we have been looking at the adoption, the implementation, the deployment, and the application of different technology stacks to drive improvements in operations, which leads to control and cost reduction.”

According to Kilcoyne, if a buy-side institution can demonstrate cost control, cost reduction and compliance, then they will attract the capital.

“It is about cost control, and capital follows those three, and it is all about assets under management, and return. If you are delivering on those by protecting the cost on the controls then you are appealing to the investment community, and you are also appealing and satisfying the regulatory requirements. So we need to consider bifurcation and the application of the technologies to product innovation versus automation and operational improvement.”

### Innovationstruck

Although there are challenges in ramping up technological innovation, industry participants agree it pays off.

For example, SmartStream Innovation Labs offer a dedicated group of technologists and experts that implement new technologies, predominantly around AI and machine learning.

Additionally, SmartStream has created innovation teams within the organisation, which look at how both technologies can drive real benefits to its customers.

“The problem is that organisations want to embrace technology but are unsure about how to do it in a way that drives real benefit. We have created internal groups of people who have been in the industry for 20-40 years, to be able to identify real problems that we can apply the technologies to solve, and then we work with our clients to be able to test and prove those real world examples. So it is all around relevance and benefit. It is a real purpose-driven innovation, rather than innovation, looking for a purpose,” explains Kilcoyne.

Meanwhile, since 2016, FIS has been modernising and transforming every aspect of its business, and has created standards to simplify processes and integrate with emerging technologies including the cloud and AI.

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***“The problem is that organisations want to embrace technology but are unsure about how to do it in a way that drives real benefit”***

Baldesare says: “We decided to invest in our infrastructure and build our own private cloud, and then migrate our applications over time into a private cloud. That timely investment meant we were, and still are, ahead of our competitors as many of our peers still do not deliver something similar at scale.”

“That approach allowed us to standardise our technology stack and create a resilient environment that is a lot more flexible and quick to execute — something which proved crucial when the COVID-19 pandemic hit. Ultimately, embracing technology innovation early has helped us improve customer experience which sits at the heart of our ambition.”

Discussing what Tora has been working on to ramp up technological innovation, Campean says: “We began life as a cloud-based company in 2004. We believe in the power of technological innovation and have always deployed a strategy focused on enabling our clients to grow while also helping them reduce costs.”

Tora offered a unified cloud-based order execution management system platform, which is now fully integrated with its portfolio management system, which is an all-in-one solution that can be used across multiple asset classes, multiple desks and all regions with one single sign on.

“We have always focused on advanced technology to ensure our clients have access to the best in breed platform. We are adopting automated horizontal (spawning new services instances) and vertical (spawning new services hosts) scalability strategies that use cloud managed technologies, alongside automated failover and recovery mechanisms that use distinct availability zones,” adds Campean.

Additionally, Tora is also expanding its AI and machine learning models to provide pre- and post-trade TCA tools for new asset classes, and continuing to enrich the APIs that, it claims, make its platform a truly open system. ■



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# Africa: What's new in the custody field?

**Societe Generale's Jean-François Marchand discusses the African financial markets that network managers should keep their eyes on**

The African custody landscape is diverse and reflects the maturity levels of financial markets across the continent. Even before the COVID-19 pandemic, only a handful of countries could boast solid market infrastructures and market capitalisations above US\$6 billion.

At the end of 2018 South Africa, Nigeria, Morocco, Egypt, Kenya and Tunisia were the only countries to match this criteria. It leaves out a vast portion of Africa.

Against this background, what are the emerging African financial markets that network managers should keep their eyes on?

## **Sub-saharan Africa**

The Western African Economic and Monetary Union (WAEMU) includes Ivory Coast, Mali, Senegal, Benin, Togo and Burkina Faso, which consolidated their stock exchange (to BRVM) and central securities depositories (to BCEAO) market infrastructure into a single financial market. The Central African Economic and Monetary Union (CAEMU) is made up of Cameroon, Gabon, Chad, Equatorial Guinea, Central African Republic and Congo with a unified stock exchange (BVMAC) and CSD (BEAC).



WAEMU and CAEMU both share a common legal framework (Ohada) and operate a currency peg to the euro. They also share a similar financial policy which includes research to access new sources of funding, ambitious economic emergence programmes and sustainable growth programmes under the United Nations. All in all, this resulted in a booming government bonds and treasury-bills primary market which represented an accumulated amount of €17.4 billion between 2006 and 2018, according to BRVM for WAEMU and BEAC for CAEMU.

The opportunity to boost market liquidity and generate economies of scale are also strong incentives for such regional co-operation. In the

two regions, there seems to be a common flight towards quality and security in the custody field: traditionally regional brokers had the lion's share and provided custody as an ancillary service on top of execution and research. However, weak capitalisation and poor ratings have served as a barrier, limiting opportunity for global custodians to appoint these brokerage firms as their sub-custodian in the local market.

Three international banks have opened local custody series in WAEMU markets over the past 10 years, including Societe Generale Securities Services (SGSS). Last year, one international bank opened up in the CEMAC. Louis Banga-N'Tolo, Societe Generale's head of capital securities in CEMAC, states that a number of global custodians started enquiring about SGSS CEMAC local custody services and often favour a bundled offer from a single provider covering both WAEMU and CEMAC.

The CEMAC member states have introduced regulations designed to encourage partial privatisation of public companies. According to M. Jean-Claude Ngbwa, managing director of the regional stock exchange BVMAC, CEMAC states have taken steps to partially privatise some publicly owned companies through an initial public offering. This is expected to boost market capitalisation, attract domestic and international investors and provide funding for post COVID-19 economic recovery programmes.

Ghana is another buoyant Western African capital market. International investors have been active in this market for many years and already hold more than 20 per cent of outstanding domestic bonds, according to Ghana CSD reports.

The deregulation of the pensions sector — initiated by the Pensions Act 766 of 2008, which was implemented from 2010 — triggered a redesign of the custody landscape in Ghana.

The Act authorised the formation of Tier 3 pension schemes and requires both Tier 2 and Tier 3 pension schemes to appoint custodian banks to safekeep their scheme assets. Its implementation also prompted some banks, including Societe Generale Ghana, to venture into the custody services space. The three international banks also have a significant footprint with international global custodians.

Mozambique and Rwanda also feature prominently among the other sub-Saharan markets that we expect to form the next frontier for international investors.

A recovery in Mozambique's main exports supports commentators' predictions of an economic recovery. The projected opening of new gas fields could be instrumental, despite the current political unrest in this part of the country. Coal production will rise as global energy demand picks up, following some mothballing of some pits during 2020. According to The Economist Intelligence Unit report of June 2021, the economy is expected to grow by 4.2 per cent in 2022, encouraged by the introduction of mass vaccination and the lifting of sanitary restrictions, which is expected to boost the services sector. Unfortunately, the leading international custodians are still not active locally and only regional players are operational at the current time.

In Rwanda, the local economy delivered yearly average growth of 7.2 per cent over the decade to 2019, according to World Bank data. Institutional investment is building and becoming increasingly well organised — for example, the Rwanda Social Security Board represents over USD\$1 billion of invested assets, according to the Sovereign Wealth Fund Institute. Some international custodians are already providing access to this promising market.

### Northern Africa

Morocco stands out in the north African custody landscape and we expect service providers to move beyond a domestic service to offer a regional and global custody solution in the next five to 10 years. Indeed, the Moroccan Foreign Exchange Office regulation Article 176 makes it possible for Moroccan institutional investors (banks, funds, insurance and reinsurance companies) to diversify their investment portfolios to include international assets for between 5 and 100 per cent of total portfolio assets.

Cross-border investment flows from international asset managers are likely to drive further development of the Moroccan custody market. The Casablanca Financial City Authority (CFCA) has been set up to attract international companies including asset managers. Said Ibrahim, CEO of CFCA, explains: "Casablanca Finance City is a leading emerging global financial centre that is uniquely located as the gateway to Africa. Casablanca offers international members a sound and resilient financial sector, a connected location, a reliable market infrastructure and trusted institutions and independent authorities to capture Africa's promise and growth. Ambitiously expanding since its inception in 2010, CFC continues to grow in the vibrant city of Casablanca, while linking to business hubs throughout Africa and around the world."

CFCA has provided a number of important benefits for international players, including corporate tax incentives for funds and for asset management firms, along with unrestricted cross-border investment and foreign exchange flows.

These strong incentives have attracted several international asset managers which previously questioned Casablanca as a domicile for pan-African funds. The resultant economies of scale make the African region a new potential frontier market for their investment products.

Consequently, several custodians in Morocco have opened a sub-custody network to meet these new requirements — in fact several Moroccan banking institutions had already acquired or set up subsidiaries in other African markets that could serve fund distribution and local sub-custody requirements. In addition, the most advanced custodians in Morocco have already appointed a global custodian to supplement their in-house sub-custody network.

There is still one potential roadblock that may prevent international asset managers considering Morocco as a domicile of choice for their pan-African funds. Outsourced fund administration is scarcely seen and most domestic asset managers are currently meeting their fund administration requirements in-house. However, with the launch of real estate funds in Morocco in 2019, the first outsourced fund administration services made their appearance in that market. This opens up new possibilities. ■

**Jean-François Marchand**

Head of Africa region  
Societe Generale Securities Services



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# Seek prevention, or wait for the cure?

**Despite stringent and centralised regulation, settlement failures are still a common occurrence within the asset servicing industry, many of them due to middle-office inadequacies. Industry experts discuss why merely plastering over the wounds is no longer what the doctor ordered, and why now is as good a time as any to find a definitive cure for settlement headaches**

**Jenna Lomax reports**

In recent weeks, Torstone Technology released a report in collaboration with GreySpark Partners entitled “Future-proofing the middle-office”, which highlights that 60 per cent of bankers, brokers and the buy-side say settlement failures, attributed to inadequacies of the middle-office, are still a “significant problem” for their business.

Though the statistic may be concerning, is it unfathomable? Hiccups in the workflow of the middle-office are nothing new. The back- and middle-offices have been grappling with data connectivity issues and incomplete matching, among many other ailments, for many years.

However, nowadays, reputation is also measured by an ability to accommodate the next injection of change, whether that be the European Securities and Markets Authority’s (ESMA’s) second Markets in Financial Instruments Directive (MiFID II), the impending Central Securities Depositories Regulation (CSDR) or the possibility of the US T+1 settlement cycle coming from across the Atlantic.

Though you could say juggling all the aforementioned ‘comes with the territory’, when combined with the remote work logistics caused by COVID-19 over the past 18 months, it could become a strategic headache.

So as we emerge cautiously into a post-pandemic world, is now the time for an industry-wide convalescence — essentially where brokers, banks and the buy-side can seek a treatment, or at least a consensus of intervention, that will remove the need to plaster over more middle-office wounds? Can the middle-office find its own effective medicine or reset, and at what cost? That is the challenge.

And, though well-meaning and created with a purpose to produce industry standardisation, could regulations such as CSDR provide the conducive and conclusive cure, or could these types of regulations prolong some settlement headaches?



## What's the diagnosis?

The often overlooked — but essential — middle-office is now front and centre of the capital markets industry's change management plans, Torstone indicates in its report. But it wasn't always this way.

There used to be a time when investment in the middle-office often had a means to an end: to comply with regulations such as MiFID II and MiFIR as a consequence of the 2008 financial crisis.

"The scope of middle-office responsibility evolved idiosyncratically for banks and brokers, and this, coupled with the complexity of middle-office workflows, meant that commoditised middle-office solutions were not a commercially viable proposition for financial technology vendors to offer at the time when third-party front-office and back-office solutions began to appear," Torstone says,

giving us some context that explains where we find ourselves in the present day.

"The lack of an off-the-shelf middle-office-specific solution left a vacuum that was partly filled by back- and front-office solutions which strayed into the middle-office space," Torstone adds.

Though habits and opinions toward regulation are changing and the middle-office is perhaps finally getting the attention and treatment it needs, it still has considerable 'vacuums' to be filled because of the holes that were previously filled by the idiosyncratic systems that Torstone describes.

As Ashmita Gupta, director of business intelligence and analytics at Linedata, cites: "Many firms are still using manual systems or are using different systems for the front-office and middle-office that do not communicate well with each other. There is also no data repository."

The settlement challenges surrounding automation, communication and data efficiency can come in many forms; whether it be automation versus manual processes, workload versus available skillset, or the tallying up of a team's collective years of experience, or lack of — not to mention the ability to accommodate market and business change at a practical cost, which can drastically differ depending on the size of the firm.

Matt Johnson, director, institutional trade processing product management, Depository Trust & Clearing Corporation (DTCC), gives credence to the understanding that not every bank or broker is starting from the same vantage point and why this matters.

He says: "Generally speaking, the larger sell-side firms have high levels of middle-office efficiency and high successful settlement rates, whereas many smaller buy-side firms are still using manual post-trade processes and hence are likely to experience higher levels of settlement failure."

When it comes to middle-office inadequacies, why they occur and what can be done to fix them, fragmented automation systems, weak dataflow, failing manual processes, coupled with middle-office communications (or lack thereof) are the four corners that need to be first addressed. If one of these areas is failing, things can snowball, and very quickly.



When asked what steps are required to address these points of inefficiency, Karan Kapoor, head of regulatory change and regtech at Delta Capita, details “it always goes back to the data and the entire process around settlement efficiency management”.

“Big banks are made of layers of system stacks, each dealing with different asset classes and regions. Functionalities overlap to make it even more complicated. Having multiple sources of the same information adds a significant burden to understand what the golden source is.”

However, with this in mind, do bankers and brokers always have the freedom, understanding or indeed resources to find the right data and/or technological solutions to rectify these ailments? Of course, the willingness to examine and identify settlement failures requires an open-mindedness to change — as the saying goes: “you can lead the horse to the water, but you can’t make it drink”.

Less than half of asset managers asked in Torstone’s survey (45 per cent) say they intend to change their middle-office system entirely — unfortunately that means more than half are not planning to, or simply cannot.

In the middle-office’s defence, Delta Capita’s Kapoor affirms: “There is a lack of established processes that provide the right guidance for settlement failure prevention. It is less about inadequacies of the middle-office teams, and more to do with the tools and information that these teams are set up with to manage the settlement efficiency.”

### **New prescription?**

When looking specifically at data flows, just over a third of participants in Torstone’s survey say they were unsatisfied with the speed of data transit from back-office to the front-office.

“Whether the issue is due to inadequate software, bad data or poor connectivity, the only way out is automation — preferably straight-through processing (STP),” notes Torstone.

Highlighting the need for improved data flows, David Pearson, product head for middle-office solutions at Torstone, says: “The reality is accurate and cohesive data is required to drive the entire

workflow chain, and successful re-engineering projects to achieve STP and automation throughout the post-trade operation will consider how best to provide the data these systems need.”

It is widely hoped that further integration with third-parties, combined with the utilisation of technologies often already available in-house, will help dataflow and ease the process of STP as many of the matching, allocation and settlement issues begin and end in the reconciliation of front-, middle- and back-office data.

And as Kapoor indicates: “Data flow must be a joint effort. Good data at the top will result in good data further on in the settlement lifecycle.”

If this is not the case, this can lead to the allocation of trades to incorrect legal entities, failed settlements and the need for significant manual intervention to rectify issues, an understanding that Torstone reiterates in its survey.

Those who took part in Torstone’s survey say that 23 per cent of the reasons for settlement failure were due to operational or technology issues, exacerbating a need for technology updates.

But, as previously mentioned, the industry is far from a consensus.

“While a number of asset managers are leading the way, we are not yet seeing an industry wide increase in investment across the board”, says Alan McKenna, managing director, global head of middle-office services at Apex.

“However, there is a greater appreciation of the service providers in the market who offer the services and products market participants need, with all the integration already done which clients can benefit from,” he adds.

Of course, the first step toward technology improvement and refined data flow is communication — arguably the first and most important hurdle for different offices to jump over — and in sync.

“If the front-office wants to trade security and does not inform the middle-office correctly, this creates delays that affect both parties”, explains LineData’s Gupta. “Efficient communication between teams is important, and this can only be resolved by collaborating and communicating with a common view.”

**“Data flow must be a joint effort. Good data at the top will result in good data further on in the settlement lifecycle”**

**Karan Kapoor, Delta Capita**





***“Firms need to have selected and onboarded a buy-in agent by the time the [CSDR] regulation is implemented. If this is not done, market participants could face challenges in complying with the regulation”***

**Matt Johnson, DTCC**

### **Regulation: What the doctor ordered?**

Regulations have perhaps been the prerequisite for the increasing need to streamline the settlement process. But would the industry be in such a rush to streamline if such a high volume of regulation had not been issued to the industry over the last decade?

“CSDR poses some potential headaches for bankers and brokers, especially when one considers the potential punitive fines and buy-ins that could occur for brokerage houses that are already operating on paper-thin margins,” indicates Apex’s McKenna.

At present, the European middle-office’s closest upcoming obstacle is to tackle the changes required by the third phase of the EU’s CSDR, known as the Settlement Discipline Regime (SDR II).

Commenting on what SDR II means for the middle- and back-office, John Omahen, head of securities processing at FIS, says: “The introduction of SDR II in 2022 will force firms to increase their focus on reducing settlement failures as failures will incur penalties and a new and costly buy-in process will be triggered.”

He adds: “With increased financial penalties there is now a greater incentive to address long-term settlement problems.”

Though the UK announced it would not implement this part of the regulation last year, Torstone’s report says this “[signals] perhaps the beginning of a regulatory divergence, creating both uncertainty and opportunity for firms operating in the UK”.

But for Europe at least, the CSDR regulation aims to ease operational hardships of the settlement process and evoke quicker settlement. However, there is still some industry concern that its introduction may cause some hardship — opening up the operational wounds it was prescribed to heal.

As Torstone’s Pearson indicates: “What we may see is the ‘sticking plaster’ approach to patch up the fixable scenarios leaving operations staff to deal with the individual issues as they occur.”

Some of these individual issues could need “total digital transformation or small scale changes to legacy technology and operations”, details DTCC’s Johnson. He also outlines the buy-in process as an “area which is causing concern”.

“Banks and brokers need to be prepared to process partial settlements where and when applicable and support their clients when a buy-in occurs,” he says.

“Firms need to have selected and onboarded a buy-in agent by the time the regulation is implemented. If this is not done, market participants could face challenges in complying with the regulation.”

## T+1

DTCC launched a two-year industry roadmap to shorten the settlement cycle for US equities to one business day (T+1) in February of this year. Most countries operate on T+2 or two business days after the transaction date, which Camille McKelvey, head of business development, STP at MarketAxess, says “still leaves a fairly sizable gap between execution and delivery of securities.”

She adds: “If we can continue to bring execution and settlement closer together then we will be able to gain even more efficiencies. There is a lot of talk about a move to T+1, and this would be a great step forward.”

However, there is a wide consensus in the industry that the turning toward T+1 or even T+0 for greater STP will not solely provide the cure for settlement inefficiencies.

FIS’s Omahen suggests that “innovative technologies like predictive analytics will need to step in to really achieve the efficiency gains and risk reduction that the industry needs”.

Of course settlement cycle choices and technology adoption is a decision to be made by regions and independent businesses respectively, but what else can regulators in different regions do to enhance industry collaboration for settlement processes?

Torstone’s Pearson claims: “The regulators are doing enough right now. Brokers, banks, and buy-sides need some breathing space to target their own strategies, rather than being led by the incessant regulatory changes that demand time and budget.”

When asked the same question McKenna reflects: “Regulators can monitor, control and discipline where needed, however real innovation comes from recognising opportunities that efficient process data can provide.”

***“The introduction of SDR II in 2022 will force firms to increase their focus on reducing settlement failures as failures will incur penalties and a new and costly buy-in process will be triggered”***

**John Omahen, FIS**

## Settlement cure?

The ongoing pandemic resulted in a need for social distancing and remote work, for longer than anyone may have first perceived, or indeed liked, back in March 2020. On the one hand, isolation made growth more difficult to achieve for almost all businesses across the world.

Though, on the other hand, it certainly highlighted the importance of business process resilience in asset servicing and specifically the streamlining of settlement trades of which there appears to be no looking back.

As DTCC’s Johnson says: “The need to achieve settlement efficiency ahead of SDR implementation, combined with last year’s COVID-19 pandemic-induced volatility, is causing many institutions to improve middle-office efficiency.”

MarketAccess’ McKelvey concludes that the best way to seek more settlement efficiency is for all offices, front, middle and back, to work together.

“Utopia would be no exception and a 100 per cent settlement rate”, she says, “but as an industry we have a long way to go. In the near-term, all parts of the chain from the front- to the back-office need to be working together to drive efficiencies and reduce risk.” ■

# The Asset Servicing Times Industry Excellence Awards

## 2021 Shortlists

### European Fund Administrator Of The Year

- Apex Group
- BNP Paribas Securities Services
- Societe Generale Securities Services
- Northern Trust

### Americas Fund Administrator Of The Year

- Apex Group
- Sudrania Fund Services
- CIBC Mellon
- SEI

### Asia – Pacific Fund Administrator Of The Year

- State Street
- BNP Paribas Securities Services
- Apex Group
- Sanne

### Client Service for Fund Administration Award

- Apex Group
- Maples Group
- CIBC Mellon
- Link Group

### Global Fund Administrator Of The Year

- Apex Group
- BNY Mellon
- Northern Trust
- SS&C Technologies

### European Custodian Of The Year

- BNP Paribas Securities Services
- Northern Trust
- SEB

### Americas Custodian Of The Year

- BNY Mellon
- State Street

### Asia Pacific Custodian Of The Year

- State Street
- BNP Paribas Securities Services
- Standard Chartered
- BNY Mellon

### Client Service for Custody Award

- CIBC Mellon
- SEB

### Global Custodian Of The Year

- Northern Trust
- BNY Mellon

# 2021 asset servicing times

## INDUSTRY EXCELLENCE AWARDS



### Digital Asset Custody Initiative Award

- Onchain Custodian
- SECDEX Group
- State Street
- Societe Generale Securities Services
- CIBC Mellon

### Best Asset Servicing Technology Product

- Calastone
- Smartstream
- Confluence Technologies
- Fenargo
- EquiLend

### Asset Servicing Regulatory Solution Of The Year

- AccessFintech
- Broadridge
- TCS
- SIX
- IHS Markit

### Outstanding Innovation Award

- Goal Group
- FIS
- EquiLend
- SS&C Technologies

### ESG Initiative 2021

- Apex Group
- BNP Paribas Securities Services
- SIX

### Equity, Diversity & Inclusion Initiative 2021

- Women in Securities Finance
- Women in Asset Servicing

### Network Management Team Of The Year

- NSD Russia
- RBC Investor & Treasury Services
- SEB

### Asset Servicing Rising Star 2021

- Charlotte Baker – Goal Group
- Pardeep Cassells – AccessFintech
- Ewa Skala – BNP Paribas Securities Services
- Anshul Rajput – SmartStream
- Sharde McCorkle – Sionic

### Lifetime Achievement Award

- Patrick Colle – BNP Paribas Securities Services
- Margaret Harwood-Jones – Standard Chartered
- John Byrne – Sionic
- Bill Stone – SS&C Technologies

# Collaboration for a new era in securities services

**The pandemic has challenged global financial markets in unprecedented ways, but it also presents an opportunity for reflection and acceleration of digitisation initiatives. Jonathan Ehrenfeld, co-head of Capital Markets Strategy, SWIFT, explains more**

To paint a picture of the volatility experienced by the market during the pandemic, in March 2020 there was close to a 30 per cent year-to-date growth on delivery-versus-payments instructions sent over the SWIFT network.

This spike in volumes has led to a number of operational challenges for financial institutions. For one, as volumes increase, so too do the number of exceptions that operations teams need to manage.

“Managing exceptions can be challenging in normal times, requiring a lot of manual intervention and multiple back and forth phone calls and emails to fix,” says Charifa El Otmani, co-head of capital markets Strategy at SWIFT. “And this has become even more challenging during the pandemic, with all the operational and security complexities introduced by remote working. So managing exceptions

in a more cost and time-efficient way is a key area of focus for the industry at the moment.”

Compounding this, many operations teams have to juggle between different systems and tools from their various service providers.

“There is an increased focus on interoperability that stems from the complexities of having to connect to and maintain operational relationships with multiple service providers and systems, often for a single process flow like exception management,” explains Jonathan Ehrenfeld, co-head of capital markets strategy at SWIFT.

“We are now seeing operations teams asking SWIFT how we can help to make their lives easier by offering a single window into multiple services and providers.”

starting to be implemented for securities transactions as well — to provide an end-to-end, two-sided, and neutral view of transactions.”

With greater transparency, financial institutions can manage exceptions more easily and even pre-empt transactions at risk of becoming exceptions to fix them on time. As a result of fewer exceptions and faster resolution times, firms gain more operational bandwidth to allocate resources to other service differentiating areas, such as user experience and innovation initiatives.

In areas where there is no competitive advantage for financial institutions to differentiate their services, however, collaboration offers an opportunity to mutualise costs and amplify benefits across the industry.

Financial institutions are turning their attention to market utilities and platforms to help them reduce costs while maintaining high levels of service, usability, efficiency, and this within a secure and resilient environment, according to El Otmani.

El Otmani elaborates: “To this end, our community is looking at SWIFT to be the ‘platform of platforms’, enabling access to the best-in-class capabilities of different providers via a single collaborative platform.”

## Creating a collaborative post-trade platform

“In our role as a neutral industry cooperative, it is important for SWIFT that we adopt an inclusive approach to service development and cost mutualisation that benefits the whole community and elevates service levels across the industry,” highlights El Otmani.

Connecting users and providers on a collaborative platform encourages the development of sustainable and value-added services. But these efforts must also be aligned with industry best practices and requirements as well.

El Otmani continues: “SWIFT leverages its experience working on industry transformation projects and close relationships with industry-led committees and associations, to ensure that the best interest of the financial industry is considered. Such is the case when we worked on standards solutions to help financial institutions cope with the second Shareholder Rights Directive (SRD II) and Central Securities Depositories Regulation (CSDR) requirements, for example.”

## Opportunities through collaboration

Collaboration and consortiums in the securities industry — between fintechs and financial institutions, and between financial institutions themselves — are not new. For one, collaboration creates opportunities for innovation. Another major driving force is the ability to reduce costs by creating shared efficiencies. Here again, exception handling is a good example.

“To manage exceptions effectively, you need transparency across the transaction value chain about the status of instructions,” says Ehrenfeld. “This is something we are collaborating with the financial community on. We see an opportunity to leverage the ISO 23897 unique transaction identifier (UTI) — which was implemented for some derivative contracts following the financial crisis and is

The platform also needs to be easy to connect to and onboard. Alongside integration options leveraging APIs and cloud technology, interoperability between standards within the platform helps lower the barriers to participation.

The platform community spirit also moves the industry towards higher levels of standardisation and harmonisation in areas such as transaction identifiers, which can facilitate efficiencies by enabling visibility throughout the settlement and reconciliation value chains. It is also in the industry's mutual interest to reinforce its cybersecurity and financial crime compliance controls. Therefore, the platform should include embedded and mandatory security controls to safeguard users in an automated manner.

### Powering smarter securities

“Over the next two years and beyond, we are embarking on a strategy to transform the SWIFT platform to provide instant and frictionless transactions,” Ehrenfeld explains. “Our goal is to enable smarter securities processes through expanded platform capabilities that offer access to mutualised services in areas such as transaction tracking, pre-validation, screening and data and analytics tools.”

A collaborative platform is key to enabling securities participants to respond to market trends and customer demands. It will improve post-trade processing efficiency, transparency and speed, supporting the industry's move to shorter settlement cycles and meeting demanding CSDR Rrequirements.

“Our vision to be the connector of platforms also extends to bridging environments for traditional and alternative assets such as tokenised assets,” notes Ehrenfeld.

“We are exploring with the community ways to evolve our platform to offer the same level of security, resiliency, transparency, and service quality for these assets, and the environments where they can be issued, settled and traded, as we do for traditional assets.”

### Strength in numbers

Along with achieving shared efficiencies, a collaborative platform provides a holistic offering along the securities flow with opportunities

to strengthen relationships across all segments of the capital markets. It is also an opportunity for third-party solution providers to tap into the rich data available on the platform and, in return, offer best-in-class solutions to the community.

According to El Otamni, SWIFT's biggest strength is its community. He affirms: “We actively collaborate and consult with our members and wider securities ecosystem from the point of ideation to implementation.”

“As we strive to build incremental value in our offerings, we continuously test and fine tune specifications based on community feedback.”

### Time for a new approach

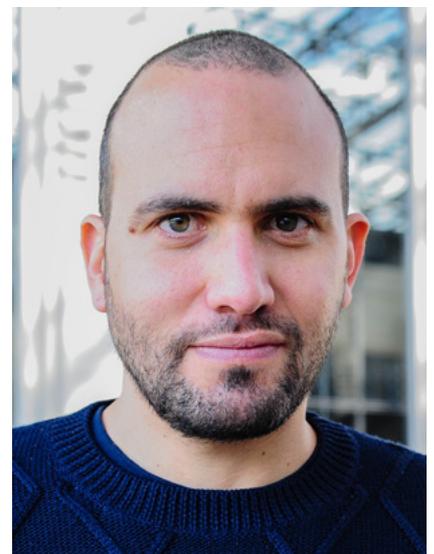
As the financial industry accelerates its evolution with extensive digitisation and innovation, now is the time to tackle some of the most persistent pain points once and for all. But to reach the level of efficiencies required, we need to go beyond current post-trade operating models and towards a collaborative platform for the post-trade industry.

Ehrenfeld concludes: “SWIFT is leading this journey together with our capital markets community. Now is the chance for the securities industry to take the next step forward on enhancing customer experience and driving increased efficiency across the industry as a whole.” ■

**Jonathan Ehrenfeld**

Co-head of capital markets strategy

SWIFT



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# Front-runners embrace change as new era dawns

Goal Group's Vicky Dean, managing director EMEA and global head of client services, discusses how the financial services industry is dealing with the changing expectations from staff and clients on digitalisation

As the world continues to deal with the COVID-19 pandemic and its fallout, the global financial community is getting to grips with radically altered expectations and attitudes from staff and clients that go well beyond the shift to remote working. Financial institutions are striving to emerge stronger by becoming more resilient to risk and by taking full advantage of the leap forward in digitalisation seen across the globe. Service providers who successfully rise to these challenges themselves, embracing change on all fronts and seizing new opportunities, stand to play a key role in helping their clients do the same.

## A catalyst for cloud adoption

At Goal, we were able to adapt our business quickly in March 2020, switching to a secure remote work set-up almost at the flick of a switch thanks to our pre-pandemic cloud migration and substantial investment in digital transformation. It is undoubtedly the built-in agility and resilience of our cloud-based digital infrastructure and applications that allowed us to maintain 'business as usual' from the outset, and address our clients' needs quickly and flexibly.

It is widely felt that the pandemic-induced adoption of cloud technology accelerated the industry's digital transformation by several years. A report by the Association for Financial Markets in Europe and PwC pointed to a 30 per cent rise in cloud adoption between 2018 and 2020, and analyst firm Gartner projects that cloud spending will increase by 18 per cent in 2021 alone. Our global team has witnessed first-hand the sea-change in attitude towards cloud computing and the industry's new enthusiasm to explore its full potential, not only as a platform for remote working but for improved business resilience, data security, scalability, integrated client service, and enterprise innovation. Reflecting this trend, new business enquiries for our cloud-based suite of applications rose during the pandemic and our processing levels are now at an all-time high across both withholding tax reclaims and securities class actions recoveries.

## Reassessing risk

Financial institutions are putting measures in place to mitigate some of the organisational risks that were so painfully exposed during the last 18 months. Much of this work focuses on business continuity, where cloud technology again plays a critical role. Regardless of the maturity of their in-house digital transformation programmes, institutions can

***“It is evident that ambitious and open-minded companies who successfully embrace hybrid working free themselves from geographical constraints and pave the way for next-level business growth”***

still leverage cloud to strengthen their resilience through Software as a Service (SaaS) and our technologies are supporting clients around the globe as they strive to keep their operations up and running.

Given our specialism in the securities class actions field, it is important to highlight that litigation risks have been broadening for several years and that the pandemic has intensified this. Many areas of corporate stewardship other than finance are now coming under closer public scrutiny, with the potential to affect share price and result in shareholder litigation. For instance, there are increasing numbers of cases being filed that address a company’s environmental, social and governance (ESG) commitments and performance, from climate change and sustainability to diversity and inclusion. Our industry must remain attuned to public and investor sentiment, and adapt corporate governance controls to adequately manage the new risk landscape.

Equally, clients across both sides of our business have seen a sharpened focus on the notion of fiduciary responsibility as investors become more engaged, more willing to push for change in the companies they have invested in, and more aware of their rights. Fund managers, custodians and trustees are under pressure to adapt and scale up their service proposition to meet their fiduciary obligations to a higher standard and more cost-effectively — and they are embracing the latest fintech to do so.

## ESG takes centre stage

The many legacies of the pandemic include a heightened awareness of our personal and corporate social responsibility, and a greater appreciation of the interconnectedness of our world. Societies and businesses are reflecting these new values as they rebuild, putting sustainability and wider ESG factors at their heart. This is imperative from both an ethical and reputational perspective — and service providers must set an example.

As a global fintech we are proud to have transitioned to a more sustainable way of operating, underpinned by cloud technology. We were able to decommission all of our servers, radically reduce our carbon footprint and build a far greener and smarter business that better meets the expectations of our clients and staff alike. Even pre-pandemic we had reduced our fixed office space, non-essential business travel and we were already splitting our time between the office and remote working. Given the vast benefits that hybrid working brings in terms of sustainability, cost and productivity, we are making a permanent switch to this model, where it suits operational needs and staff preferences. We will recommence valuable in-person meetings, such as client service reviews and sales meetings, when it is safe to do so.

## Flex for success

It is evident that ambitious and open-minded companies who successfully embrace hybrid working free themselves from geographical constraints and pave the way for next-level business growth. Our global footprint and robust underlying infrastructure enables us to access a far wider talent pool, with a more diverse social, cultural and linguistic profile that, in turn, opens doors to new market opportunities and enhances competitiveness.

To fully capitalise on the potential of a truly global workforce, it is vital to consider alternative contractual arrangements. A recent article by the London Business School on Forbes.com described how many commentators “have been anticipating a shift away from traditional salaried employment for decades, and COVID-19 has — as in so many other areas — accelerated this trend”. Flexing attitudes and working practices goes hand-in-hand with digital transformation and lays the foundation to true innovation and growth.

## Service provision in the spotlight

As we approach 2022, investment intermediaries are reassessing their service provision and considering ways to adapt and modernise their offering in line with the new market demands. They are seeking smart, simple-to-use solutions with advanced levels of automation that help them bring scale and efficiency to their current processes, maximising returns for investors while containing costs. Front-runners are aiming to go beyond their fiduciary duty and capitalise on the power of cloud to deliver real innovation and service advantage to their clients.

Interestingly, we have seen equally strong demand for our subscription-based online services to support and streamline in-house operations as for our fully outsourced solutions. It is clear that service providers need to remain flexible and offer a range of deployment options to suit all client circumstances. Whether they choose in-house or outsourced delivery, clients have one universal expectation: a consistently high level of service whenever and wherever they need it, via the channels they choose. It has never been more important to listen to client preferences — what level of interaction do they desire? Do they prefer to communicate digitally or can we add value with face-to-face contact? At which stage of their journey do they require support? These answers may currently be swayed by the client's location, with the world at very different stages of the pandemic.

Personalising the client journey in line with their preferences — especially in a highly digitalised fintech business — is the key to client satisfaction. For us, this requires a strong local presence across all world time zones, managed carefully to maintain consistency and quality. To this end we recently centralised the management of our client services team, still delivering tailored service locally but listening at a global level. This has already made it easier to gauge client feedback and channel it into tangible technology and service improvements, such as the redevelopment of our client portal and the continuing roll-out of our cloud services.

In summary, the COVID-19 pandemic brought the transformative potential of cloud technology to the fore and it is now up to financial institutions, with the help of leading service providers, to maintain their digital momentum. A recent article in Computer Weekly states: "Cloud is no longer a future or emerging trend, but a critical investment a financial institution must make to remain competitive."

***"Personalising the client journey in line with their preferences — especially in a highly digitalised fintech business — is the key to client satisfaction"***

At the same time, organisations are navigating an altered risk landscape with increased scrutiny not only on their finances but also on their business model, ESG and sustainability credentials. Those in the financial community who commit to adapting their working practices in the long-term, while progressing their digital journey, will successfully overcome these challenges and tap into unprecedented opportunities to innovate their service offering — driving their business forward to provide the most value to the market. ■

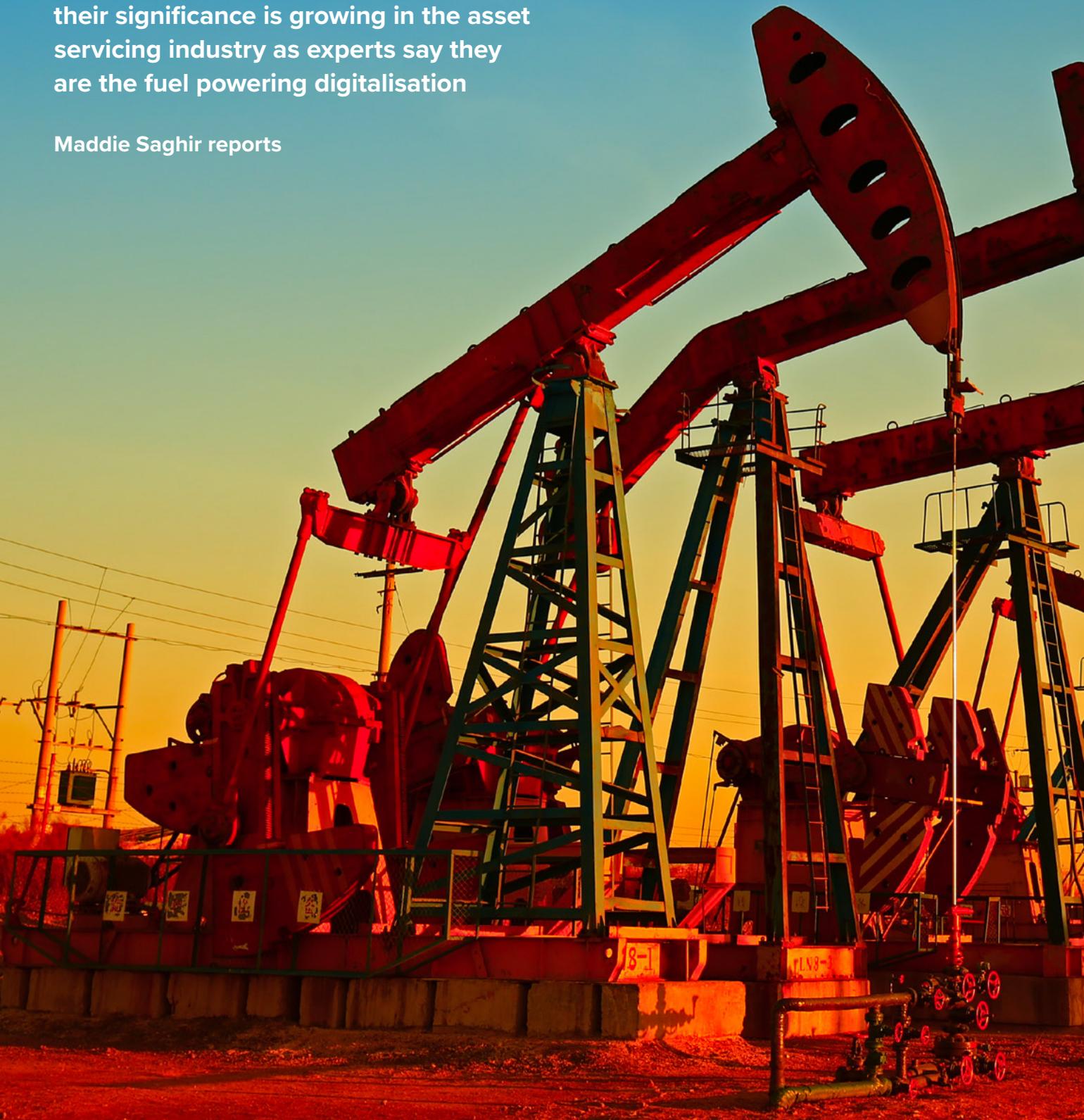
**Vicky Dean**  
Managing director EMEA  
and global head of client services  
Goal Group



# The fuel powering digitisation

APIs have been around for some time but their significance is growing in the asset servicing industry as experts say they are the fuel powering digitalisation

Maddie Saghir reports





Application programming interfaces (APIs) foster improved data movement between applications and across ecosystems, resulting in reduced costs, improved efficiency and an overall better experience for customers.

APIs enable greater process automation and real-time connection between systems. This is accelerating innovation, including opening asset servicing platforms to new applications based on disruptive technologies such as machine learning and blockchain.

While an API is not a new construct, it has become increasingly significant in the past few years within the asset servicing industry. For example, in August this year Citi Treasury and Trade Solutions (TTS) Asia Pacific revealed it had processed close to 350 million API calls for corporate clients since the launch of APIs for corporates in 2017.

The growing popularity of APIs can be attributed to the growing digital environment where data is exchanged online in real time.

“By nature, APIs are nimble, thus requiring less effort to collaborate with the customer applications. This collaboration makes it easier for asset servicing and transaction processing organisations to work in real time, circumventing the historical challenges of sharing large files of event data, reference data, positions data and entitlements,” explains Vishal Sharma, vice president, enterprise architecture, API lead for investor communication solutions, at Broadridge.

The incorporation of real-time event data using APIs enables event processors to have access to event data from a source, in real time, enabling their clients access to event information as near to market availability as possible.

According to Sharma, this is key when it comes to decision-making and trading strategies that are wrapped around corporate action event processing.

API connectivity to position management systems allows the event processors to see positions updated in real time, ensuring that the data being used to process the event is the most up-to-date data at that point. This allows for entitlements to be calculated and communicated in real time, also using APIs.

APIs play a large role in helping financial services firms evolve their infrastructure and achieve digital transformation, and the 2021

***“As the pandemic confined citizens to their homes, we saw a rapid widespread adoption of digital tools for everyday tasks, from online medical consultations to shopping to internet banking. APIs are the real fuel powering this digitalisation”***

FIS Readiness Report shows this playing out across the financial services landscape.

The report found that nearly one third of capital markets firms say their competitive strategy includes making their data more accessible for clients via open APIs, while 36 per cent of finance leaders in corporations say the same.

Meanwhile, Forbes found that 72 per cent of the top 50 global banks have invested in the creation of API platforms.

## Growing popularity

Initially tagged as a technology instrument to connect systems, APIs have indeed been around for quite some time. However, APIs can now be leveraged as a monetisable asset, thus the ‘API as a Product’ model emerged.

Sharma says digitalisation in fintech has been given further impetus by the impact of the pandemic. He elaborates: “As the pandemic confined citizens to their homes, we saw a rapid widespread adoption of digital tools for everyday tasks, from online medical consultations to shopping to internet banking. APIs are the real fuel powering this digitalisation.”

Further factors contributing to the uptake in the adoption of APIs can be put down to regulation. Robert Stark, global head of market strategy at Kyriba, suggests regulations such as the Payment Services

Directive Two (PSD2) in Europe encourage banks to think about APIs, stimulating the development of products and services that could drive new revenue channels for financial institutions.

PSD2 is a European regulation for electronic payment services that aims to increase payments security in Europe and boost innovation while helping banking services adapt to new technologies. Asset Servicing Times finds that PSD2 is evidence of the increasing importance APIs are acquiring in different financial sectors.

Weighing in on the increasing popularity of APIs, Sanjeev Jain, Asia Pacific head of payments and receivables, TTS, Citi, comments: “Indeed, APIs have been around for many decades, but in the past APIs have been relegated to connecting system components to one another (for example, connecting databases to application front-ends).”

APIs are increasingly popular on the back of availability and the connectivity that they offer. According to Jain, this has allowed corporates to build innovative products and services of their own by combining ‘building block’ API services, including those provided by banks.

Jain explains: “For their end-consumers or target market segments, corporates can offer a customer experience that is much easier and agile, like never before.”

Another key catalyst in this growth story is the explosion in instant payments adoption around Asia Pacific.

“In this case, real-time payments based solutions have gelled very well with similar real-time integration technology between corporates and banks. This growth in instant payments has been driven by the increasing demand for instant fulfilment of goods and services among consumers flowing into the corporate payments world,” Jain comments.

Meanwhile, Rocky Martinez, chief technical officer, SmartStream RDU, notes: “In my opinion, there are three significant reasons for accelerated API adoption. The first reason is that many back-office and middle-office functions have become commoditised and this is not a competitive advantage.”

As Porter and Barney state in their work, competitive advantage has a limited life. Therefore, many of the functions which made firms differentiated have become standard across the industry.



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Second, Martinez observes the cost of running enterprise software has become increasingly expensive, which is pushing the maintenance of systems to another trusted party is beneficial.

Third, asset servicing firms accept that they do not need to be owners of every process, just the processes their clients find relevant, according to Martinez.

“Having a security master does not provide added value to an end customer, but having a customer service representative available 24 hours a day facilitating asset movement will drive customers to one provider versus another,” he explains.

APIs can provide significant opportunities, hence the uptake in its adoption. API integration has opened the industry to real-time information and eliminated the need for batch cycles in the middle of the night.

Before asset servicing firms started to embrace APIs, customers would have to wait to see positions change after a sale or purchase, have delayed values of assets because pricing was done once at the end of the day, and wait for payments, according to Martinez.

Martinez affirms: “Real-time banking and API integration allows an asset servicing firm to call multiple payment APIs quickly to complete cash movements in seconds. Up-to-date third-party books and records, provide updated position movements and call an API for the current price when customers review their portfolios.”

## Risks to consider

As Peter Parker said “with great power comes great responsibility”. So, when systems are open for good citizens, they are implicitly opened for malicious users too. Consequently, experts agree the most risk industry participants see with APIs relates to security. For example, security is a fundamental foundation of Broadridge’s systems’ design, and API security is taken very seriously, with a stern governance pattern around the security and accessibility of its APIs.

“Another key facet of risk that I foresee is that, in a rush to make systems more open, firms may potentially overlook what their customers are looking for and start making their system ‘as is’ available as an API,” says Sharma.

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## **“Real-time banking and API integration allows an asset servicing firm to call multiple payment APIs quickly to complete cash movements in seconds”**

Sharma cautions: “This is a recipe for disaster; we need to make sure an API is ‘consumer-centric’ through effective product management and a governance body to ensure that every public or private API goes through security and integrity checks and balances.”

Stark suggests: “The entire data journey needs to be assessed for risks and vulnerabilities. This is less to do with API connectors and more to do with securing endpoints and the internal governance of the systems that are being connected.”

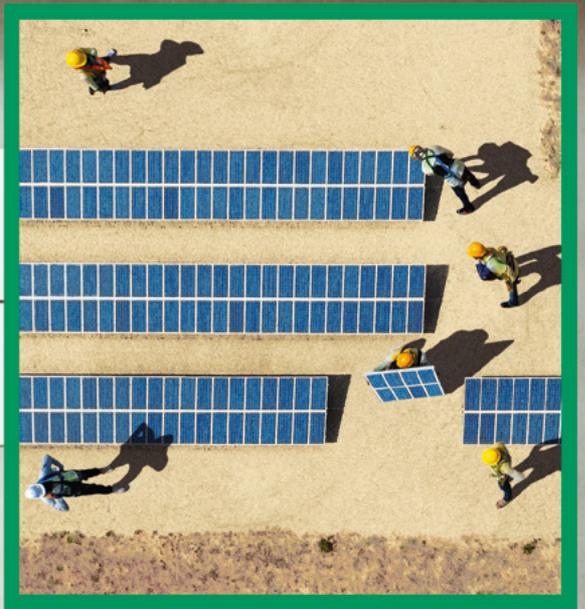
Standards such as ISO27001, SOC2 reporting, and SIG2 questionnaires encourage software providers to deliver a high level of security or risk being left off a vendor shortlist.

Additionally, there remains a significant amount of legacy technology in banking and financial services. Modernising solutions to include the necessary APIs remains high on the agenda of many chief technology officers, while newer fintechs have been able to disrupt the traditional players because they’ve started with modern, API-centric technology focused on a digital experience for their clients.

Baldesare concludes: “The biggest risk to consider is not associated with the APIs themselves, but in not developing a clear data and digital strategy that will support the ongoing funding, development, and maintenance of these APIs.”

“Many firms remain challenged due to incomplete strategies or conflicting priorities associated with their digital transformation.” ■

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# Is your DApp regulatory-grade?

Exactpro's Alexey Zverev discusses that to facilitate the smooth transition towards emerging technologies, regulatory bodies require systemically important financial market infrastructures to ensure that while innovating, they also stay operationally resilient

Distributed ledger technology (DLT) innovation is an important trend shaping the financial services industry.

It is no surprise that under the pressure of ongoing overall digital transformation, many financial institutions are keen to adopt DLT in development of their platforms. However, when the innovation is introduced on a scale of a major capital market participant, its potential impact is likely to be shared by a larger financial services community.

To facilitate the smooth transition towards the emerging technologies, the regulatory bodies require systemically important financial market infrastructures to ensure that while innovating, they also stay operationally resilient.

## Operational resilience: regulatory perspective

Following last year's disruptive events, the regulators are continuing to increase their focus on the financial sector's operational resilience, i.e. the ability to prevent, adapt and respond to, recover and learn from operational disruption.

In the UK, the 'Building operational resilience' Policy Statement, produced by the Financial Conduct Authority (FCA), Prudential Regulation Authority (PRA) and Bank of England in March 2021, introduces new rules which are set to go into effect early next year. In the preceding discussion paper (dated July 2018), regulatory bodies outlined the main challenges of operational resilience and provided guidance on identifying important business services and assessing the impact of potential disruptions.

The European regulatory framework is consistent with its UK counterpart in terms of these challenges and sees emerging technologies, along with growing dependency on data, as generating a need for stronger operational resilience.

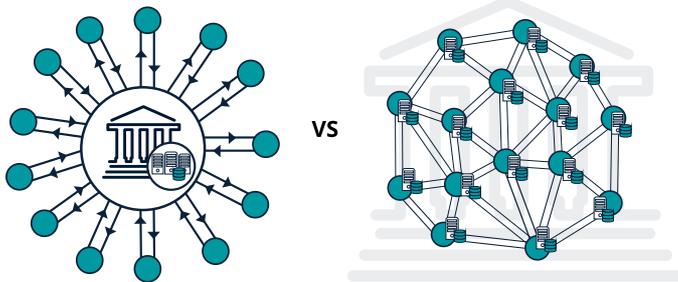
As outlined in the EC's regulation on a pilot regime for financial market infrastructures (FMIs) based on DLT, the operators of market infrastructures are expected to "ensure that the overall IT and cyber arrangements related to the use of their DLT are proportionate to the nature, scale and complexity of their business". To fully comply with this requirement, regulated entities need to establish adequate software testing procedures for their core platforms. But what sort of testing would be considered regulatory-grade?

## Achieving regulatory standard in software testing

Regulatory-grade testing is software testing that helps the firms ensure “continued transparency, availability, reliability and security of their services and activities, including the reliability of smart contracts used on the DLT”, according to the EC. It also provides information sufficient for making robust decisions. In achieving this, it is crucial that testing activities generate regulatory-grade data; the data that satisfies the requirements of integrity, security and confidentiality, availability, and accessibility.

Speaking broadly, in order to meet regulatory requirements, you need to prove the ability to manage your application providing fair, consistent and uninterrupted transaction management service for all participants. The key for this ability is extensive knowledge of the system that you are going to manage. The only possible way of obtaining such knowledge is via experiments and observation, which is essentially what software testing is. For those trying to develop and maintain complex financial systems, insufficient testing leads to inevitable failure.

## Understanding the challenges



However, testing the systems based on distributed blockchains is not a trivial task. For comparison, in electronic trading, all transactions in modern stock exchanges are processed by matching, clearing and settlement engines hosted in fully controlled data centers managed by corresponding organisations. In contrast to that, in distributed blockchains, transactions are processed by a distributed network of nodes hosted and managed by the participants. This introduces a number of complications for software testing, such as:

- The impossibility to simulate adequate transactions without a production blockchain
- Non-deterministic response due to complexity of the state of the network caused by distributed processing
- Diversity of APIs, platforms, and application versions within the network
- Complexity of smart contract transactions involving multiple participants simultaneously
- Poor integration with legacy systems outside of the network
- Absence of a central processing point allowing you to deduce and drill down the chain of events that led to particular outcomes

## Addressing the complexity: processes, platforms, people

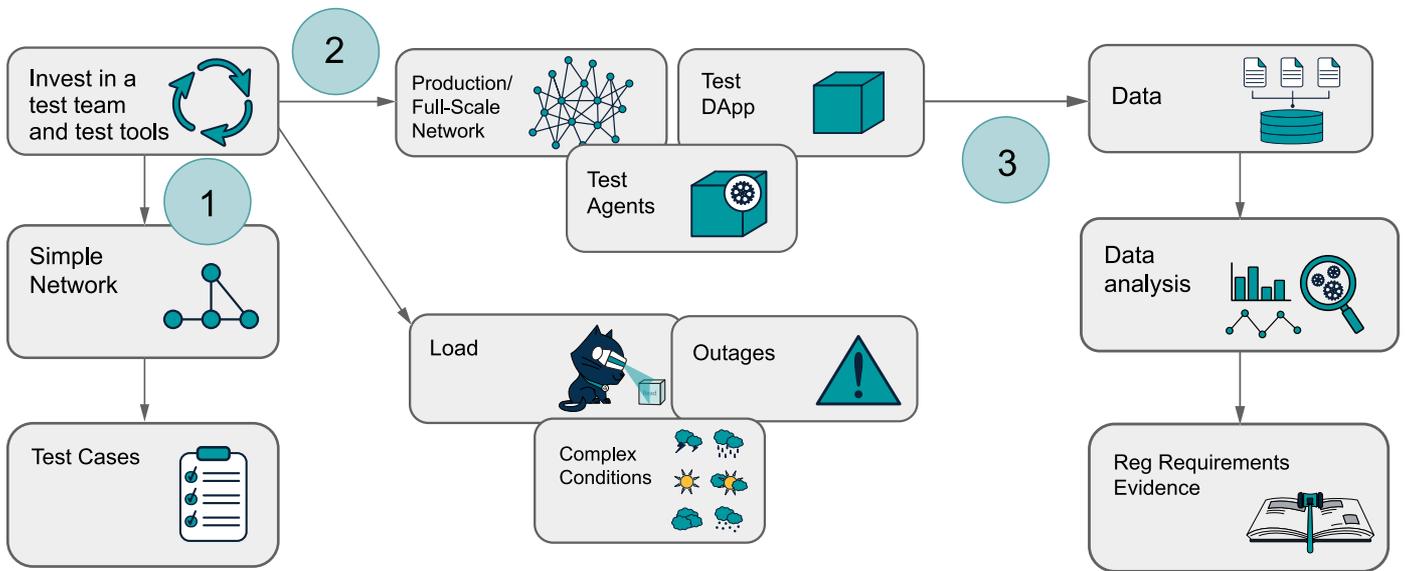
Key ingredients to accommodate software testing of a regulatory grade are processes, platforms and people.

### Setting up software testing process

At Exactpro, we understand the software testing process as an empirical technical investigation conducted to provide stakeholders with the regulatory-grade information about the quality of the product or service under test.

The key characteristics of a good testing process are:

- Focus on observation: aiming to discover new information rather than confirming the assumptions
- Testing is relentless learning: meaningful testing demands sufficient time investment
- Early testing: testing activities should start as early as possible during the requirement definition stage and continue throughout the whole duration of the project
- Independent perspective: testing team has an ability to form objective judgements and a voice to advocate for proper governance
- Test automation: efficient testing is impossible without employing test tools — not for the sake of automation per se, but rather to augment testing capabilities of highly qualified software testing engineers



Regulatory-grade testing requires a significant investment of time of highly skilled resources. It is important that this talent is providing an independent view: they are not the same people who built the platform in the first place, e.g. in-house developers or a software vendor.

1. As the first step, we must ensure that basic scenarios of the core functionality pass the tests in a semi-isolated controlled environment.
2. The next step is end-to-end testing in a production or production-like network, consisting of an environment, a test version of your application distributed across this environment, and test agents — pieces of software that will facilitate testing and collect important information. Using this toolkit will enable you to load the system with appropriate flow of transactions covering important scenarios; simulate outages in the network and test application; and simulate complex conditions your application is required to sustain.
3. Finally, from all these activities you will need to collect data containing sufficient information to understand the outcome of the tests. This data must be processed and analysed to extract the knowledge about the system behaviour and draw insights needed to provide uninterrupted service.

### Building regulatory-grade platforms

The processes should be supported by the platforms. To provide the regulatory-grade testing capabilities, a test automation framework

should rely on the latest technology stack and support testing at the confluence of functional and non-functional approaches.

The extreme complexity of the task implies a set of requirements for the testing framework that are crucial to ensuring an appropriate level of quality assessment.

First of all, a technologically advanced testing tool fit for the task of testing distributed apps on a regulatory grade requires the ability to invoke tests through a variety of platforms and APIs along with the potential to run many different tests many times. Another important requirement is the possibility to simulate important conditions by deploying the test code into the network. To enable its users to draw insights from system behaviour, the testing harness should be able to process high volumes of data. On top of that, the ability to invoke and analyse the outcome of chaotic scenarios as well as to deal with non-deterministic responses entails the requirement of a tool being enhanced with a strong analytics module.

To meet the complexity level of the present-day distributed non-deterministic platforms, we developed a software testing framework satisfying these requirements.

th2 is an open source toolkit providing end-to-end functional and non-functional test automation for complex distributed transaction processing systems. Built as a cloud-native Kubernetes-driven solution, it aims to help regulated entities stay compliant and resilient

***“With DLT projects being implemented on a greater scale, the financial services industry is rapidly transforming, adopting new technology and, then, regulatory standards”***

to disruption, while focusing on innovation and having the freedom to embrace emerging technologies.

It works as a multi-platform framework with a powerful API, enabling intelligent interaction with many widely adopted network protocols as well as API, UI, DLT and cloud endpoints. Meanwhile, its microservices architecture allows building complex test instruments and executing sophisticated test algorithms.

Additionally, it supports the GitOps paradigm, enabling CI/CD pipeline integration and is designed to perform autonomous test execution. As well as this, th2 is ready for implementation of AI-driven test libraries for machine learning and advanced data analytics.

Though this set of test automation capabilities may seem comprehensive all by itself, it is still not enough to establish a robust software testing approach of a regulatory scale without highly-skilled professionals to make processes and platforms work together.

### **Supporting processes and platforms with people**

If asked to outline core qualities of the people who are apt for the task of testing of complex distributed systems. A number of key characteristics can be suggested such as a software tester’s mindset to actively pursue exploring of the systems they test. Furthermore, a software developer’s skills can be suggested to enable the creation of code for tests that adequately cover complex behaviour of the systems

under test. Additionally, a deep understanding of business logic and technology behind the platform being tested is also key.

Hard and soft competencies that are needed to operate technologically advanced platforms and implement the required processes are outlined under the umbrella of the Zero Outage Industry Standard (ZOIS), an industry association developing best practices to ensure the highest quality of IT platforms.

The regulators expect the financial institutions operating complex distributed platforms to be able to maintain high availability and resilience to disruption, even in a chaotic environment.

This can only be achieved by intelligent end-to-end testing of a distributed application in both business-as-usual and disruption scenarios under production-like conditions and in a full-scale network. That requires an investment of time in highly technical resources and advanced test tools.

With DLT projects being implemented on a greater scale, the financial services industry is rapidly transforming, adopting new technology and, then, regulatory standards.

In such a context, it is very important to establish the practice of DLT innovation that is supported by extensive regulatory-grade quality assessment. ■



**Alexey Zverev**  
CEO and co-founder  
Exactpro

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