Improving the Plumbing:
tackling post-trade inefficiencies

The Realization Group

BT

Improving the plumbing: Tackling post trade inefficiencies

Although the post-trade ecosystem is seen as the 'plumbing' of financial services, mainly hidden but crucial, its role in ensuring the industry's health made it key to global post-crisis regulatory reforms. Firms have now had to deal with over a decade of rapid regulatory changes and the huge operational costs these incur. At the same time, they've also been coming to terms with the realities of shrinking margins and the need to both increase efficiencies and work towards a more sustainable business model across the board. A recent study by Deloitte[1] concluded that a standard blueprint for the entire post-trade lifecycle would significantly reduce these inefficiencies, but warned that real digital transformation was only possible via common underlying standards.

Many firms are now turning to technology investment to redress the balance and are starting to explore how new technologies can further drive their post-trade transformation. Anecdotal feedback indicates these challenges focus on three key areas:

1. **data** – difficulty with getting post-trade data, data management and reporting of relevant data to regulators, on time and in the right format
2. **risk and regulatory** – post-trade regulatory and risk management demands are draining from a resource and cost perspective, and
3. **technology** – many post-trade functions use legacy technology where updating is costly and needs an understanding of solutions available.

Underlying all of these is the constant challenge of managing costs and doing more with less.

In this report, **Nicola Tavendale** and **Mike O'Hara** of The Realization Group speak to industry leaders about the most pressing post-trade challenges and what can be done to ensure its future resiliency and ability to perform the functions vital to the growth of the industry as a whole.

[1] Future of Post-Trade – shifting the cost curve

1. Post-trade data challenges

In recent years, one of the biggest pain points for most firms operating in post-trade has been how to adapt to increasingly complex regulatory reporting, while at the same time allocating adequate resources to core activities. Regulatory reporting data can be split into two categories:

- post-trade data that has to be reported to regulators
- post-trade data required by firms, such as data feeds from trade repositories, for example APAs (Approved Publication Arrangements) or ARMs (Approved Reporting Mechanisms) in Europe and FINRA in the US.

"Over recent times, there's been an insatiable demand for data from regulators following a global agenda of increased transparency and investor protection.," says **Rob Scott**, Senior Banker, Institutionals at Commerzbank. "Some regulators are more sophisticated than others, it's difficult in all cases to see what's actually being done with all this data and how regulators are using it to actively improve/advance upon the global topics. For the most part, there are individual requests from regulators with limited joined up thinking. Regulator collaboration is likely needed in order to provide effective supervision of global capital markets."

The quantity of data needed by regulators is just one challenge. There's also the quality, accuracy, format and timeliness of reporting, as well as extracting the data they need to report from disparate systems.

Ali Rutherford, Managing Director at Ascendant Strategy, says that in order to fully exploit available opportunities, whether from new technology, managed services, or market infrastructure changes, firms need to take a long hard look at their internal architecture and work out if it's the right shape for future changes. "Fundamentally, if you have a very stovepipe, classic legacy architecture where your post-trade data is locked in a chronological processing flow, then it's difficult to get the data out when you need it, and generally quite difficult to get it back in," he warns.

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Ali Rutherford, Ascendant Strategy

The extent of this challenge is set to increase as firms start to acquire more and more post-trade data from regulatory reporting hubs or from the regulators themselves. This will augment real-time, historical and alternative data they already have.

2. Post-trade risk and regulatory challenges

The ever-evolving requirements of global regulation have also had a direct impact on most of the industry's post-trade infrastructures, including central counter party (CCP) clearing houses and central securities depositories (CSDs).

"There's a lot of regulatory complexity," says **Alex Powell**, Chief Technology Officer at Euroclear UK & Ireland. "For example, as the CSD for the UK and Ireland we're currently going through our own version of MiFID II with the incoming Central Securities Depositories Regulation (CSDR) and it's a tremendously comprehensive set of regulatory requirements. So, we have to make sure we're continually complying with those new rules and managing the risks in our business effectively. We follow a group format for our risk reporting so that we can be consistent with the other Euroclear CSDs in terms of tracking, monitoring and reporting against risks."

Diana Chan, Independent Director of Euroclear SA/NV and former CEO of EuroCCP, says that the cost of compliance is going to stay high and that improved data handling is vital to the sector's interconnected and core function of risk management. Chan explains that CCPs are highly regulated in Europe under European Market Infrastructures Regulation (EMIR), which has very stringent risk management requirements. The core of a CCP is basically the risk management engine. "CCP risk management relies on accurate and timely data inflow and outflow. The amount of margin required must be correctly calculated and notified to clearing members, and the CCP needs confirmation that the collateral has arrived in the right place at the right time," she adds. "If and when a CCP re-platforms, it could either refresh all connectivity and applications, or just the risk management engine. Essentially, the flow of data and information needs to be robust and timely. The risk exposure calculation and how much collateral is needed – not too much and not too little – needs to be stress-tested, back-tested, and proven to the satisfaction of the CCP's regulators. Good calculation is only half the challenge; the CCP must also monitor whether the required collateral has arrived on time."

But Chan adds that while compliance with regulations is essential for a CCP to maintain a license to operate, it would be difficult to have a clear-cut cost benefit analysis of a specific level of investment. "The benefit would only be proven in a financial crisis when the financial infrastructure stands up to extreme stress," she says. "The benefit is not so clearly seen in times where everything goes well."

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Diana Chan, Independent Director, Euroclear SA/NV & Former CEO, EuroCCP

For newer asset classes, such as cryptocurrencies, there isn't the same regulatory framework yet in terms of reporting. Instead, one of the post-trade challenges in the crypto space is that the standard tools that customers expect in other asset classes aren't universally available, says **Jeanine Hightower-Sellitto**, Managing Director, Operations at Gemini.

"Crypto is still an evolving space, and the tools trading firms require are not universally available amongst all markets," she says. "Gemini, for example, has drop copy and FIX connectivity, but many of the other crypto exchanges don't have those offerings in terms of connectivity and reporting. It's really hard to build standardised tools when not all the exchanges are even operating on the same type of interfaces for their customers. So while the crypto space is dealing with the issues around data and improving efficiencies in operational processes, this in turn creates extra pressures in terms of reporting and, most pressingly, risk."

Hightower-Sellitto explains that crypto assets work very differently to other asset classes as there's no centralised repository. Instead, each exchange mostly operates as a full reserve exchange, so many of the post-trade and pre-trade functions of the market involve actual movement of assets rather than reporting or risk. "Part of that risk is evaluating the security of each exchange that you're trading on; it can get very complicated," she says. In terms of promoting greater standardisation and collaboration in this area, Hightower-Sellitto adds that Gemini has been the leader in this area for some time but some of the other exchanges are now catching up. "Our customers, which are often mutual customers of other exchanges, are asking for standardised tools. There's an expectation that if crypto's going to be a financial product, then traders and institutions need these tools to build connectivity and real market-making and trading capabilities with the other exchanges," she says.

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Jeanine Hightower-Sellitto, Gemini

Using the example of recent flash crashes in the FX market, **Darren Coote**, CEO at Cobalt notes that the only data Central Banks and regulators had to review what went wrong was from the Reuters and EBS platforms. "But imagine all the trades over that period of time in one location – you could actually study that from a regulatory point of view and potentially remove a source of systemic risk," he says.

The risk and regulatory challenges are compounded by the fact that businesses are typically more interested in growth initiatives, but the regulatory burden of reporting and other compliance measures are adding cost to the business. For example, one post-trade area coming under increased scrutiny is the need for accurate timestamping, as specified in regulations such as MiFID II in Europe or under the CAT (Consolidated Audit Trail) in the US. This is a complex area and many proposed solutions are prohibitively expensive.

3. Post-trade technology challenges

In the back office is where firms face some of their biggest post-trade challenges. Many financial institutions use a number of legacy technology platforms that have been stitched together over the years, with many core securities IT systems averaging 30 to 40 years in age.

Many are using this as an opportunity to look at the technology they use in post-trade and either update, replace or outsource it. **Kaiyee Burnet**, Post-Trade at BT Radianz believes this can also go hand-in-hand with improving data handling across the organisation. "At BT, we definitely see a move by the post-trade industry towards increased demand for data, particularly in terms of alternative data," she says. "Of course, these different types of data all need infrastructure in place to support that. Firms are now aware that data is fast becoming a valuable commodity in the financial sector, but they need access to the resources, the ability to deliver to consumers and modern, robust platforms and infrastructure in place to underpin and successfully analyse and extract that value."

Coote warns of other problems that can be created by trying to build new technologies on top of existing platforms. "People tend to overlook the basics, but our approach is to modularise and break down what we do in that trade flow. Clients in our industry often have 20+ vendors layered on top of each other, which shows how complex it actually all is," he explains. "It's important to recognise that internally, people can be worried that if they pull one brick out, then everything will come crashing down. However, our modular approach prevents that and allows clients to gradually adopt up to date technology and rationalise their infrastructure"

4. Addressing the post-trade challenges

4.1 Accessing Best-in-Breed Technologies

From a data perspective, firms need to be able to report securely and as required by the regulators. And to do that, they must be able access trade repositories as needed.

Burnet argues that one of the simplest and most cost-effective ways to do this is through an extranet solution, letting firms comply with reporting requirements and data feed access over a single infrastructure. Firms can improve the data flow and their understanding of the whole post-trade data ecosystem by working with industry partners that understand the market and are already connected to many of the various participants and technology providers. Yet while there are a growing number of third-party vendors and Fintechs offering post-trade solutions, Burnet says that navigating the range of partners and technology options available can prove problematic. "At Radianz, we make sure we have the right systems on board to stay at the cutting edge so we can help our customers identify best-in-breed technologies and adopt what's available in the market in terms of solutions," she says.

Organisations that strive to find efficiencies or standardise their process across the front, middle and back offices reduce their costs because the need for translations for example is taken out of the process, adds Burnet.

4.2 Improving operational and workflow efficiencies

As well as the issues from legacy technologies and data reporting, financial institutions are becoming increasingly aware of the impact of operational and workflow inefficiencies across all post-trade functions. Recent research published by Asana[2] found that workers around the world generally spent more than 60% of their time acting essentially as a 'human API', with most of their time spent on emails or excel spreadsheets. This drain on productivity has a big impact on the costs and overheads of those operating in post-trade, where there are generally lower levels of automation than in other areas of the financial markets. Burnet agrees with the findings and adds that this is reflected in the number of post-trade organisations that are now seriously looking at how this can be addressed in their own workflows.

"The whole problem centres around human behaviour and how we can change that," she says. "For example, DTCC are looking at things like low-touch or no-touch systems whereby they take out that human API and the manual processes. And the driver behind that is once again regulation, with CSDR being implemented in Europe next year, which will penalise firms with fines if they do incur any failings in their settlement systems."

Coote believes that clients are now noticeably having 'light bulb' moments. "It's all well and good knowing what we can and can't do with the new technology, but as an industry we really need to clear up the overly complex FX workflows that have been created over the last twenty years and that can only be achieved through streamlining," he explains. "That's where Cobalt and other Fintechs can really come in and improve the data sets and infrastructure to create extra functionality, improve reporting and streamline settlement. It's in the clients' best interests, when working with regulators on new initiatives, to consult on matters with a collaborative approach from the outset, rather than retrospectively."

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Darren Coote, Cobalt

[2] The Anatomy of Work Index

4.3 Adopting more standardisation and greater collaboration

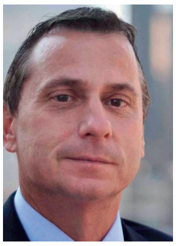
As well as increasing capital requirements and the posting of margin for OTC derivatives, the global derivatives rules created in response to the financial crisis were also designed to standardise the market. As part of this, ISDA created the widely-adopted Standard Initial Margin Model (SIMM). **Mark Demo**, Director, Industry and Strategy Director at AcadiaSoft, describes how his firm had already connected a number of large financial service firms around the world in the collateral space, leading to a successful post-trade collaboration in direct response to this regulatory challenge.

"The banks recognised that we'd already created this network and suggested that rather than each institution building something internally in response to the new margin rules, they should instead come together and create a central solution that can calculate and reconcile the inputs for these new margin types, so they have a chance to solve a collateral dispute when it happens," Demo says. "Introducing a new set of margin rules requires a high degree of collaboration to ensure a common understanding of requirements and process or the market will not function. Change needs to happen but people with imagination can figure out how to blend in the new with the old."

"Change needs to happen but people with imagination can figure out how to blend in the new with the old"

Mark Demo, AcadiaSoft

Ken DeGiglio, Chief Information Officer at EquiLend, agrees, adding that clients are also driving the demand for greater collaboration, particularly around meeting specific reporting requirements such as those mandated by the Securities Financing Transactions Regulation (SFTR). "We're very willing and able, but it's going to take a while and there will need to be a mind shift in how we practically achieve that," DeGiglio explains. "Over the next five years, we're certainly going to see a lot more integration and interoperability, including the use of open architectural standards and vendor partnerships. But it's also going to drive more acquisitions and market consolidation in the post-trade space. A further trend we see emerging is the mutualisation of some of the back office and middle office functions".



"A further trend we see emerging is the mutualisation of some of the back office and middle office functions"

Ken DeGiglio, EquiLend

4.4 Making use of new technologies

"We're now diving into the deep end of the pool on AI and machine learning and have a production beta going on with clients right now to automate their break reconciliation," says DeGiglio. EquiLend's platform is also benefitting from automating much of the SFTR processes for its clients' OTC activity.

"For us, the opportunity is to sit down with clients and start to work with them to understand where their costs are all the way through that process," says **Iain MacKay**, Product Owner, Global Post-trade Services at EquiLend. "We then look to see how we can help them either leverage existing functionality that we had so they can maximise that experience, or we identify where there are gaps in the market and then work on providing a solution that can meet requirements.

"The opportunity is to sit down with clients and start to work with them to understand where their costs are all the way through that process"

Iain Mackay, EquiLend

According to Chan, some of the processes that could really be improved are those that predict price movements, because when prices move, the CCP needs to recalculate whether or not it has sufficient collateral. "That data, or more 'intelligent calculation', is really difficult", she says. "Big data and AI could improve it to an extent. And robotics could better automate the collection and posting of collateral. More automation to makes things happen quicker could certainly help too."

4.5 Automating more

Firms across the post-trade space will be eager to explore ways to exploit their technology spend over and above enabling compliance. "In some cases, aspects of the regulatory requirements are complementary with achieving greater efficiency, but not in all cases unfortunately," adds Powell. "We're always looking at where we can automate to gain operational efficiencies and what else we can be doing to further reduce operational risk. So those two tend to go hand in hand." And new technologies aren't always the answer, he says. "For the past three to four years, there's been a view that core settlement technology could be replaced by Blockchain or DLT (distributed ledger technology) because some believe that once you've implemented the code, you no longer need anyone to run it," Powell argues. "But, over time, people have come to realise that for markets to function well they need a level of trust, someone to take the responsibility when things go wrong, who will set the rules about who can and can't be part of the network and what the requirements are to join it, and who will monitor and manage the risks. Running a CSD involves a lot more than just running a Blockchain. Instead, where we see its potential is in transforming areas where there's no automation today."

With so many post-trade functions being interconnected, improvements in one area can often have a positive knock-on effect on other operational aspects as well. For example, improved data analysis and handling is also central to creating more robust risk management processes and can significantly improve reporting quality, while greater automation provides significant cost savings as well as removes a significant source of risk created by manual processes and human error. But, "firms need to think clearly and have the right policies and relationships in place to drive an effective programme of transformation", warns Burnet.

"In some cases, aspects of the regulatory requirements are complementary with achieving greater efficiency, but not in all cases"

Alex Powell, Euroclear

4.6 Utilising the cloud

DeGiglio notes that clients in post-trade have started to embrace cloud technology in a way which was unthinkable only two or three years ago. "For us, it's been a game changer. Not so much because we want to deploy our production systems and migrate our legacy platforms to the cloud, but it's given us a sandbox to innovate in," he adds.

By adopting a credible cloud-based solution, Rutherford argues that anywhere in the process where there's an interaction involving data exchange between the client and the bank can become a candidate for transformation. "The ideal post-trade architecture should offer quick data availability in a complete form, says Rutherford.

"This gives greater flexibility, which in turn can act as a catalyst for quicker change implementation and lets firms plug new components or managed services in – and out – very quickly. Tools that allow you to improve that data flow, to speed it up or make it less error-prone and to get control around it through defined workflow, audit trails, and proper controls of who can do what, will dramatically improve the client experience," he says.

Burnet agrees, adding that a growing number of post-trade and workflow solutions now leverage the cloud and firms need to be able to exploit that. "Cloud is certainly becoming an enabler in this space. Many of the reporting facilities use cloud-based services and some of our own customers also use it in their post-trade environment," Burnet observes. Yet while new technologies can be enablers, she warns there's a risk of believing that these will always provide the answer for the post-trade sector, which is not only systemically important and highly regulated, but also uniquely complex.

4.7 Working with Fintechs and vendors

Burnet explains that there are now a growing number of Fintechs in post-trade run by people that came directly from the banks. These people are coming out of organisations, looking at the problems that they had there and are now starting their own Fintechs to offer solutions to these issues. "They are going back to their old bank and saying, 'This is what you need to do. This is what needs to change'. That's accelerating adoption and making it much easier for Fintechs to secure funding."

"Most change is like a slow train. We now have tools like AI or blockchain coming in, but how likely are these to have an impact in the immediate future?"

Kaiyee Burnet, BT

In turn, this is also likely to result in vendor partnerships becoming the norm for institutions in this space and greater integration of post-trade functions across the front, middle and back offices. Clients should now be looking at how to future-proof their organisations while also being able to identify which opportunities are worth pursuing, Burnet says, adding that BT can help as it's constantly monitoring the markets and exploring what new technologies are out there. "We now have a dizzying array of tools like AI or blockchain coming in, but how likely are these to have an impact in the immediate future? With Radianz, our product team always has one eye on the horizon and understands what's coming and how that's going to impact the market. We have people on the ground globally who feed those trends to our customers, whether they're in the US, Europe or Asia Pacific, which helps them stay one step ahead in a challenging market."

"You can't build everything yourself," says Scott. "However if you're a FinTech, do not walk into for example a head of operations and try and sell a point-to-point solution. If it doesn't integrate with other bankwide applications front to back, it will likely create downstream problems or reporting problems. For individual solutions, there'll be a limited appetite for going forward." Fintechs and vendors need to think about what value they can deliver throughout various components of the vale chain, says Scott. "The more successful companies will be the ones who can solve end-to-end problems. Larger vendors tend to have lots more to offer, smaller ones are best served to consider partnerships/alliances and apply holistic solutions to complex problems.

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Rob Scott, Commerzbank

5. Conclusion

As regulation has permanently increased the cost of business and also looks unlikely to be able to provide the industry with the solutions needed to manage these increased demands, the time for firms to seriously consider how to improve efficiencies across their entire suite of post-trade functions is very much now.

But, by considering the three core pain points – data collection and analysis, improving risk and reporting and having the right technology to reduce the number of manual processes and build for the future – firms can make significant strides towards addressing many of their inefficiencies and costs they're incurring.

Viewpoint of the technology vendor, BT

"BT Radianz has a strong legacy of working in the post-trade space. We recognise the challenges our customers face in this area and we are proactively working with them to help address them.

Our experience and credibility in the post-trade arena is demonstrated by the fact we work with all major clearing and custodial services providers and have run the SettleNET service in the UK for over 20 years.

Regarding some of the specific challenges outlined in this paper:

- BT Radianz can provide access to reporting facilities as specified in MiFID II, SFTR or by FINRACAT. All of these services can be cost-effectively provided over a single set of infrastructure with short lead times
- We can also provide access to data feeds from reporting facilities that have made feeds available This can be used to augment real time, historical and alternative data feeds
- Regardless of your post-trade technology solution, BT Radianz can help both with access to public clouds and building of hybrid solutions. We can also provide you with the infrastructure to operate your Distributed Ledger Technology (DLT) applications
- BT Radianz, working with Hoptroff, can provide you with a time-stamping solution to comply with regulation such as MIFID ii and CAT
- Working with partners such as Euromoney TRADEDATA, BT Radianz can provide you with access to a wide range of reference data
- Working with partners, BT Radianz can also offer outsourced post trade services.

We're now looking to the future and onboarding a range of post-trade services for digital assets.

If you'd like to find out how BT Radianz can help you with meeting the challenges of post-trade inefficiencies, please contact your account manager"

Michael Woodman, Managing Director, BT Radianz

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