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INTRODUCTION

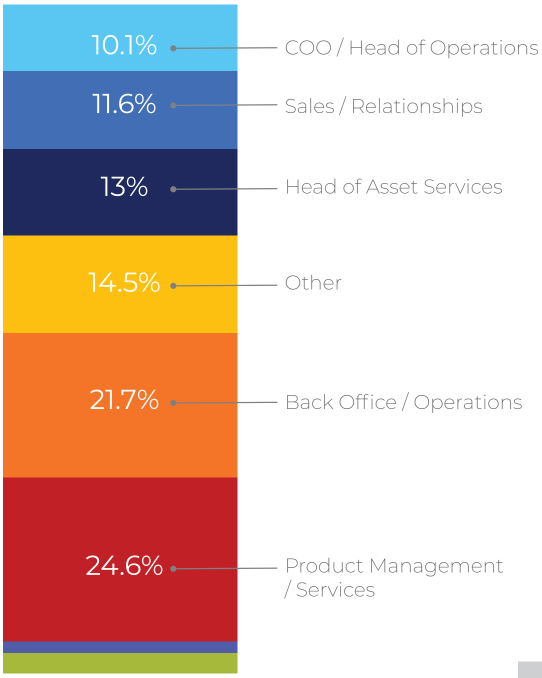
When you tell people that over 60% of our industry is paying out over USD2 million in corporate action losses every year, you expect them to disagree. What you don't expect is for them to disagree by telling you that the total losses should be much higher than that – and that the real number should range from USD3-5 million (at a business unit level) to hundreds of millions at a corporate level.

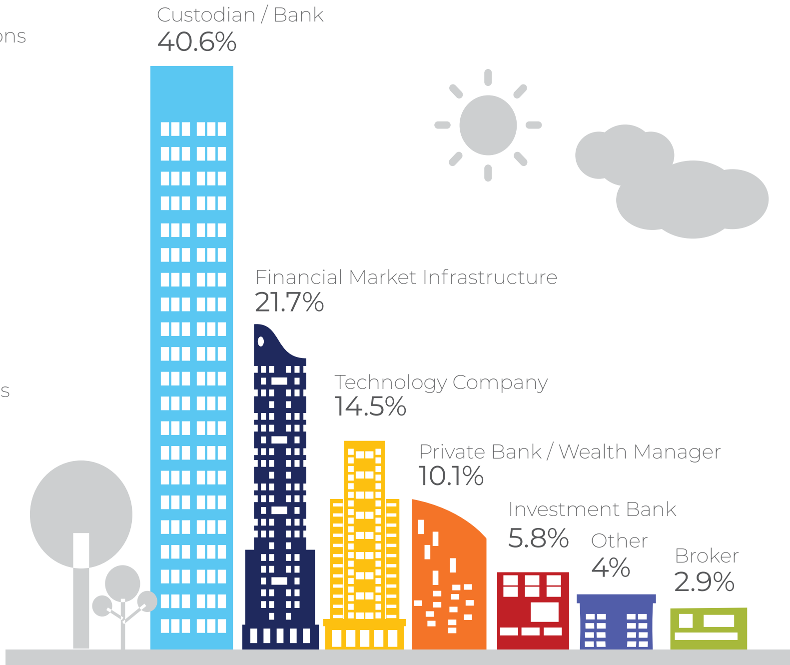
Today corporate actions are coming out of the shadows. After a long period of focus purely on efficiency gains, the industry is now ready to spend on corporate action automation as a headline organisational priority – with the objective of reducing risk above all else.

"So many practitioners have been desperate to push through change" in the corporate actions space for many years – and so what has happened in 2020 to suddenly unlock record levels of investment spend and attention? How has the perfect storm of market risks, organisational challenges and regulation all combined to push us over the threshold into taking action now? And what is each of us meant to be doing to progress?

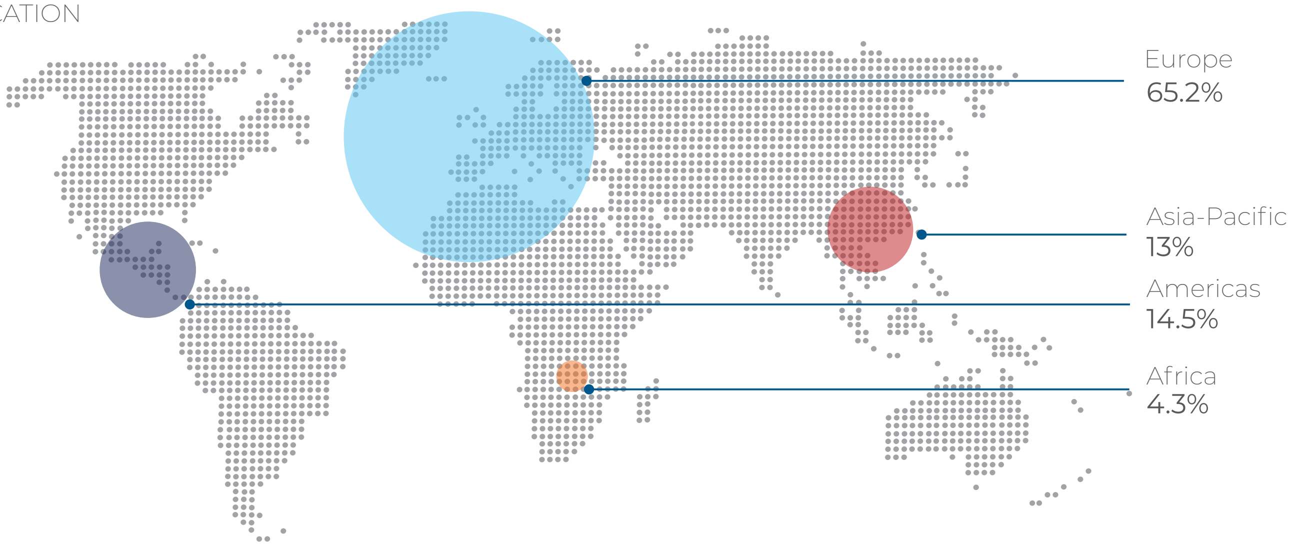
Drawing on feedback received in October 2020 from over 250 organisations globally (across all organisational profiles and geographies and subsequent qualitative discussions), this industry-wide report is designed to provide you with actionable insights that will help you to make sense of the unprecedented change going on in the corporate actions space today. In cooperating with Broadridge, ISSA, ASIFMA, The Network Forum and Global Custodian magazine on this research, our intent is not only to help you to form the right plan for your organisation – but also to present a market-wide view of areas in which the entire ecosystem can cooperate, in order to accelerate our progress.

WHO PARTICIPATED?

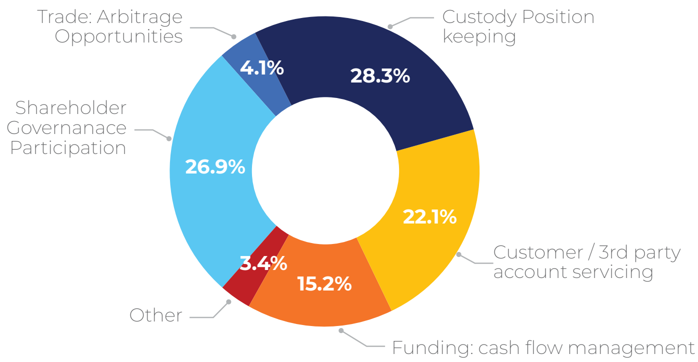




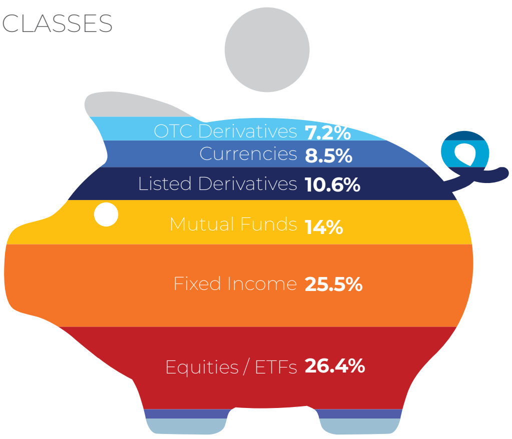
LOCATION



CORPORATE ACTION NEEDS



ASSET CLASSES



CONTENTS

WHAT DO OUR CORPORATE ACTIONS LOOK LIKE TODAY? NOT ENTIRELY AS WE'D EXPECT

Corporate actions are by no means consistent across the world and our data highlights some key inconsistencies in how corporate actions are processed today, versus our common perceptions.

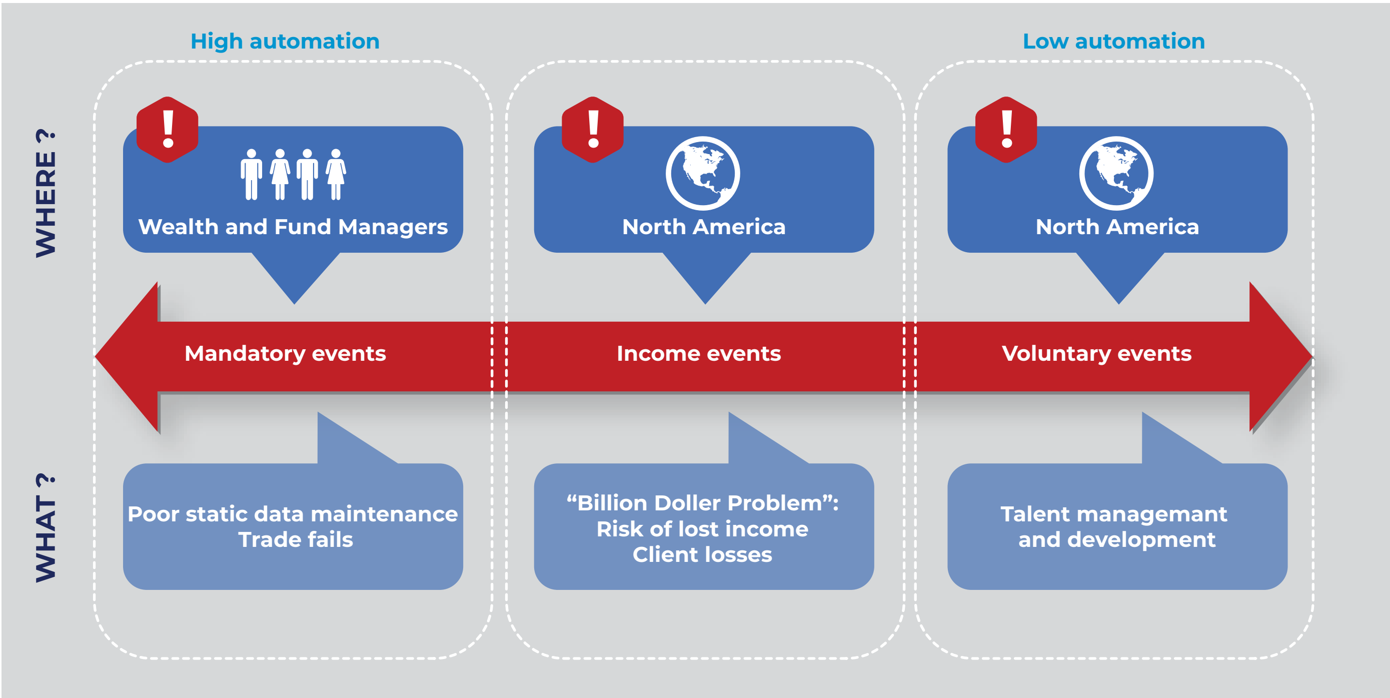


Figure 1: Where are the corporate action problems today?

	Volumes	Time spent
Income	**54%**	**30%**
Mandatory	**27%**	**20%**
Voluntary	**18%**	**30%**
Data sourcing	**-**	**20%**

Figure 2: Corporate action volumes and time spent today

First, "Western" markets do not appear to be universally more automated than those in the (more disparate) "East". Whilst Europe is consistently at or above the global average levels, North American participants lag the global averages of process automation by up to 21%, particularly in processing Income events (such as dividends).

This challenge gives rise to the "billion dollar problem" – where unclaimed income events and / or incorrect elections (i.e. stocks instead of cash) can lead to an extraordinary volume of implied losses across our industry. Conversely, processing efficiency for the same events in APAC is 14% above the global average.

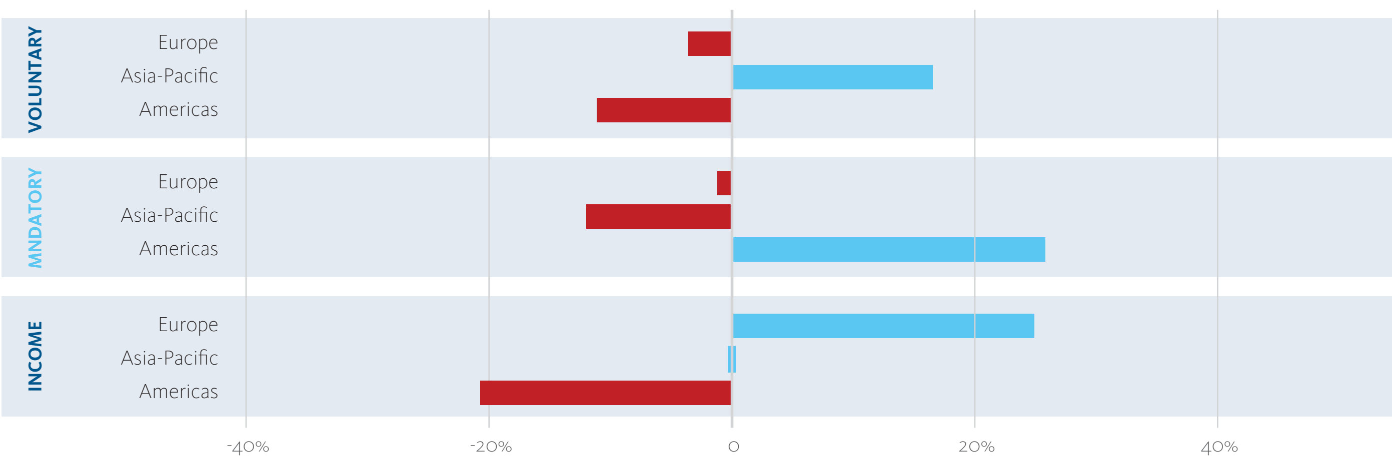


Figure 3: How efficient are we in our corporate action processing – against global averages?

Nor can we safely assume that **mandatory events** (such as stock splits) are entirely automated. Although the general trend is for automation to decline strongly as we move from Mandatory events to Voluntary ones, that is not the case outside of the traditional sell side. Asian respondents, fund and wealth managers continue to struggle with the (generally simpler) Mandatory events more than any other profiles – lagging up to 10% behind the global average. Given the wide reach of mandatory events (into core securities-master data), this is a warning that we still have some way to go in mastering the basics of corporate actions in terms of data sourcing, validation and position keeping.

Yet **voluntary events** (such as rights issues and open offers) certainly are at the tail end of our corporate action efficiency: with respondents viewing their automation levels to be around 25% globally. The very low levels of automation for these events is a reminder of the highly subjective nature of this part of the industry – and of our continuing reliance on talent and experience to keep our businesses running. Many voluntary events bring with them the need for legal opinions and data enrichment (including for tax data) – not to mention subjective decision making – meaning that human factors (such as talent development and management) are and will remain a core part of our corporate action strategies.

A full 20% of respondents' time globally is spent on **sourcing and managing event data**. Despite years (and millions of dollars) invested in automating this key step, it is disheartening to realise that 40% of a fund manager's time goes on sourcing and cleaning corporate event data; or that across Asia 27% of people's time is spent managing a data activity which offers no positive differentiation in the chain.

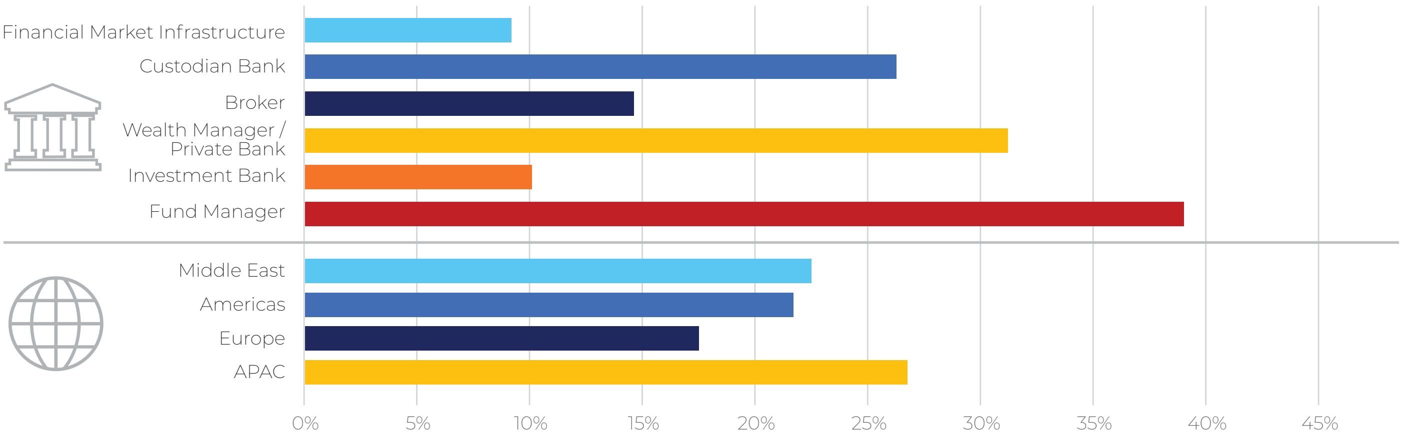


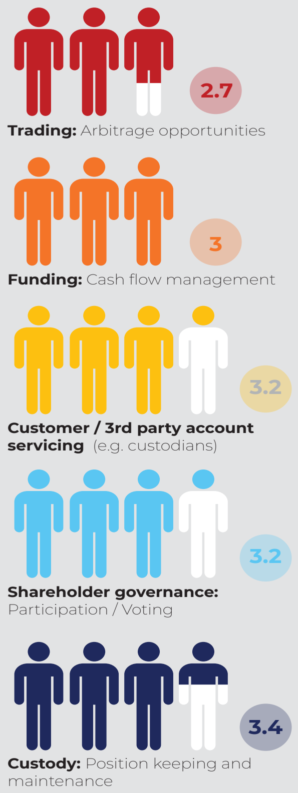
Figure 4: Time spent sourcing corporate actions (as a % of total time on corporate actions)

ACROSS THE LIFE-CYCLE: DATA IN IS HARD BUT IT'S THE CLIENT LEG THAT BREAKS THE MODEL

On a global basis, market and counterparty interaction is clearly a challenge, although collecting data appears to be harder then sending it. Event sourcing and validating data is especially problematic in APAC and Europe and, on the way out, the buy-side and those in APAC appear to struggle to communicate their instructions effectively – highlighting the huge role of communication standardisation across the corporate action ecosystem. Conversely, few seem to struggle once the data has been logged into a position keeping or entitlements system and, downstream, only cash management seems to pose a downstream problem to some participants in Asia.

The ecosystem problem again becomes apparent at the back end of the corporate action lifecycle. As simple as it may be to process a corporate event on a proprietary position, once you reach the client (or tax reclaim) then you hit the weakest point of the entire corporate action chain. Regardless of market or region, processing quality and STP rates fall significantly as soon as a customer or counterparty relationship is involved. Systems are quickly replaced by emails; logical data transformed into free text; and risks spiral very fast. Most acutely hit by these challenges are investment banks, whose daily client interactions are made up of highly sophisticated products and workflows (e.g. prime services, securities lending and structured products), each of which offer the largest scope for data entry- and rekeying-issues along the chain.

BY USER: INTERNAL CLIENTS MAY BE LESS SATISFIED THAN EXTERNAL ONES



Yet although it may be relatively easier to process corporate events for internal positions, that doesn't mean that everyone inside the organisation is easy to look after. Whilst core corporate actions users in the back office have the highest view of their corporate action quality, their internal clients in Treasury and Arbitrage strongly disagree. Undermined by poor quality data in cash management, and by late data in trading, these two constituents (generally colleagues in APAC and Europe) have the lowest views of corporate action quality across the organisation – significantly lower than their client servicing colleagues.

Figure 5: How optimal do you consider your current corporate action processing infrastructure to be?"

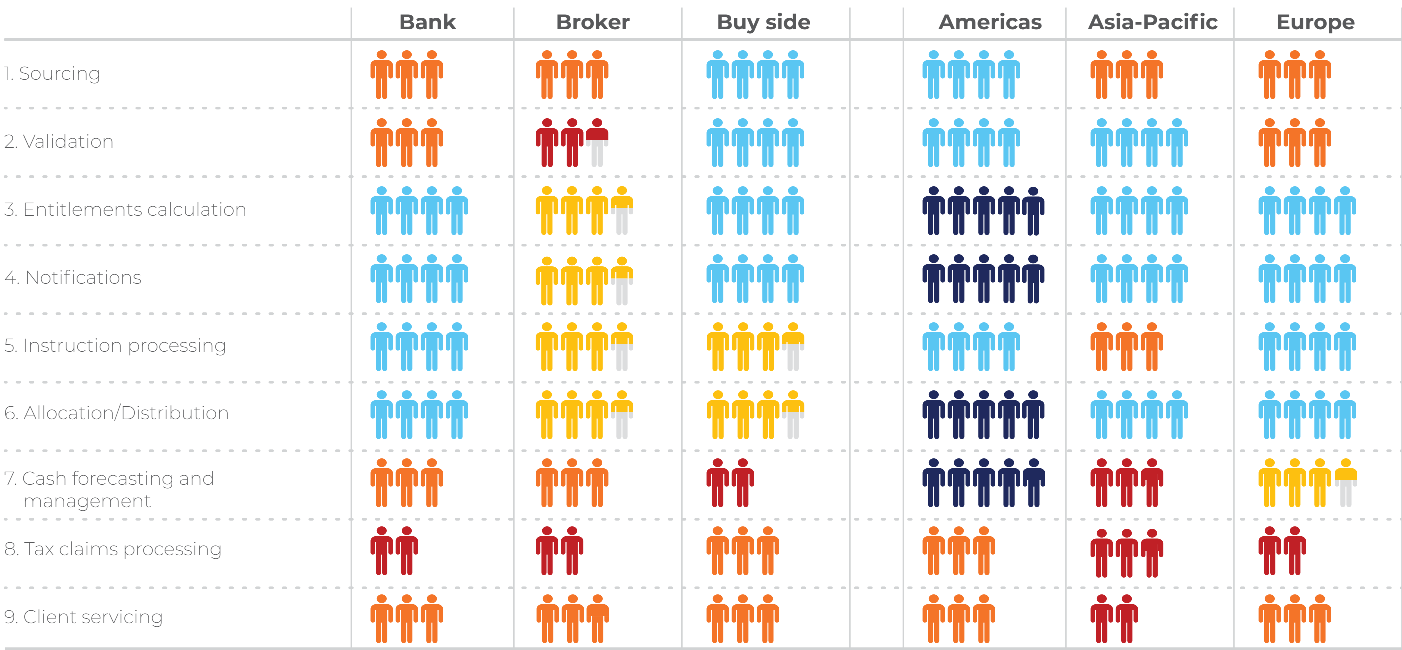


Figure 5: How optimal do you consider your current corporate action processing infrastructure to be?

WHAT IS THE CORPORATE ACTIONS PROBLEM?

The symptoms of corporate action challenges stretch from front to back and across numerous internal and external relationships. But as diverse as these symptoms may be, their root causes are surprisingly consistent.

At the root of 57% of corporate action costs are data errors - added to by a further 30% in manual errors. That only 10% of errors are triggered by system errors is clear evidence that, once the event is in the system, it can be handled well.

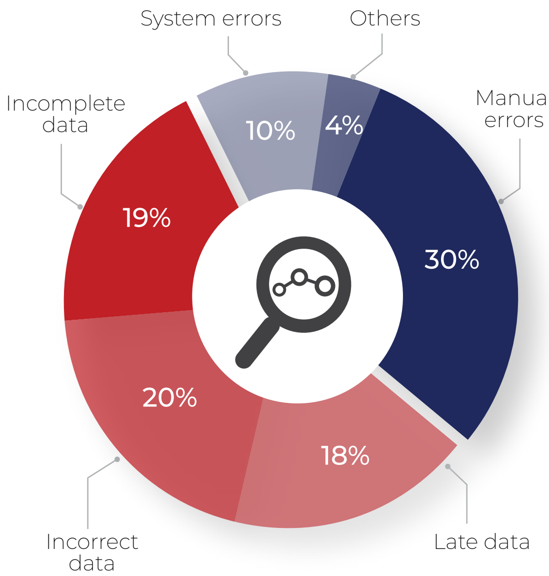


Figure 6: The root causes of major corporate action errors

MARKET CONNECTIVITY

At its most acute in APAC and Africa is the problem of market connectivity. Whilst European investors have grown used to interacting with securities depositories (CSDs) on a largely automated basis, their peers in Asia and Africa continue to rely on information manually rekeyed from websites and portals. In many cases, this event data then needs to be translated from local language and potentially enriched before it can be distributed to global investors.

This rekeying is risky enough in itself but the challenge in many markets is that volumes are often highly concentrated. Corporate events in Korea and Japan are Ex- on their announcement date, for example, and the vast majority of Japanese dividends are paid within the same, very short window. But this isn't just an emerging markets problem. In the USA, 'short-fuse' events are not uncommon, where issuers announce corporate events with short deadlines and incomplete event data – creating a high-pressure moment for corporate action teams not only to respond – but to simply understand the event first. In all of these cases, the risk of manual entry quickly becomes a scale and capacity risk, which can potentially undermine every step of the corporate action lifecycle – from the client communication all the way back through to the market instruction.

DATA INTEGRITY: WHO TO TRUST?

In this chain, the 'garbage in' problem is huge and it is unfortunately not unique to markets where manual data entry is the norm. Even in the most evolved markets, inconsistent event data continues to be a "an accident waiting to happen". Given the challenges associated with market data sourcing, organisations are forced to work every minute to make sure that their corporate action data is accurate and true to the issuer's actual plan.

This problem (and its costs) escalates when multiple clients and counterparties are involved – as corporate event data quickly becomes relative. Before any client can instruct, they must first make sure that they have properly understood and identified the event in question – giving rise to an extensive data reconciliation and validation burden between counterparties. Even if your data is 'perfect', you still have to dedicate significant resources to evidencing that to your clients. "No one has a reliable golden source of data today – it's all relative".

In the continuing absence of fully automated, reliable event data, corporate action event processing is not only unnecessarily expensive and avoidably slow – but it is still risky and a shaky foundation on which to run increasingly complex investment portfolios.

Inconsistent event data continues to be a "an accident waiting to happen"

	Americas	Asia-Pacific	Europe
1. Sourcing	Challenges automating with FMI	Challenges automating with FMI	System capability limitations
2. Validation	Incomplete data	Challenges automating with FMI	Incomplete data
3. Entitlements calculation	System capability limitations	Over-reliance on manual processing	System capability limitations
4. Notifications	System capability limitations	System capability limitations	System capability limitations
5. Instruction processing	Over-reliance on manual processing	Challenges automating with FMI	System capability limitations
6. Allocation/ Distribution	Over-reliance on manual processing	System capability limitations	System capability limitations
7. Cash forecasting and management	System capability limitations	System capability limitations	System capability limitations
8. Tax claims processing	Over-reliance on manual processing	Regional variances (preventing standardisation)	Over-reliance on manual processing
9. Client servicing	Over-reliance on manual processing	Over-reliance on manual processing	System capability limitations

Figure 7: Key challenges in corporate action processing

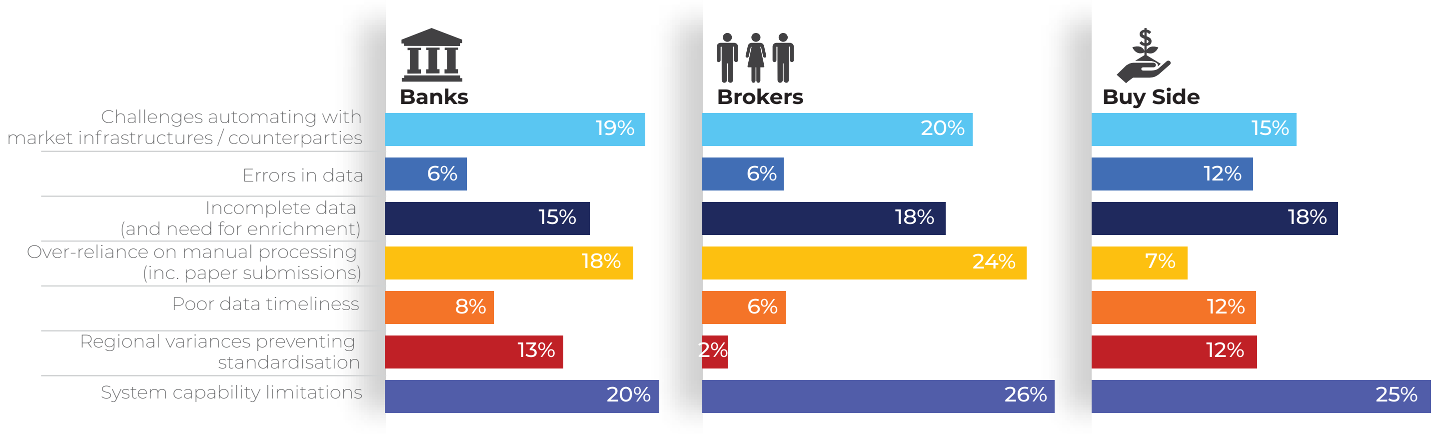


Figure 8: What is holding back your corporate action automation today?

SYSTEM CAPABILITIES: "NO ONE CAN DO WHAT I NEED"

If market connectivity is creating avoidable risks at the front end of the corporate action lifecycle, a perceived lack of system capabilities is a challenge across entire organisations today. Most acutely felt in Europe, this challenge is driven by two core factors that keep on breaking the target operating model.

First, many corporate action **workflows are seen to be too complex** or bespoke to be housed within core position-keeping systems. Client-related flows (such as securities lending, synthetic and structured products) stand out as common examples, as do key functional areas (such as tax booking and calendar management).

Second, the **high degree of country-level variances** in European and Asian event types and treatment rules (as we have seen with SRD II recently) makes the functional requirements for any global corporate action platform extremely complex, requiring very high levels of specialism in order to automate them. With few vendors perceived as being able to master these complexities, firms have often (reluctantly) turned to local platforms and home-builds (including tactical workarounds) in order to improve their processing.

MANUAL PROCESSES

Unfortunately, corporate action automation is still not possible for those that might have the best system in the world, directly connected to the market – mainly on account of continuing paper-based corporate action processes around the world.

As much as "it feels very 1980s to still be processing corporate actions on paper" the practice is amazingly widespread – and not just in frontier markets. North American respondents to our survey highlight the problem across large swathes of their corporate action lifecycle – driven by events such as DRIPs (Dividend Reinvestment Plans), by the need for (Medallion-backed) signatures on a range of event instructions and by the remaining $780bn of stocks that are in physical securities.

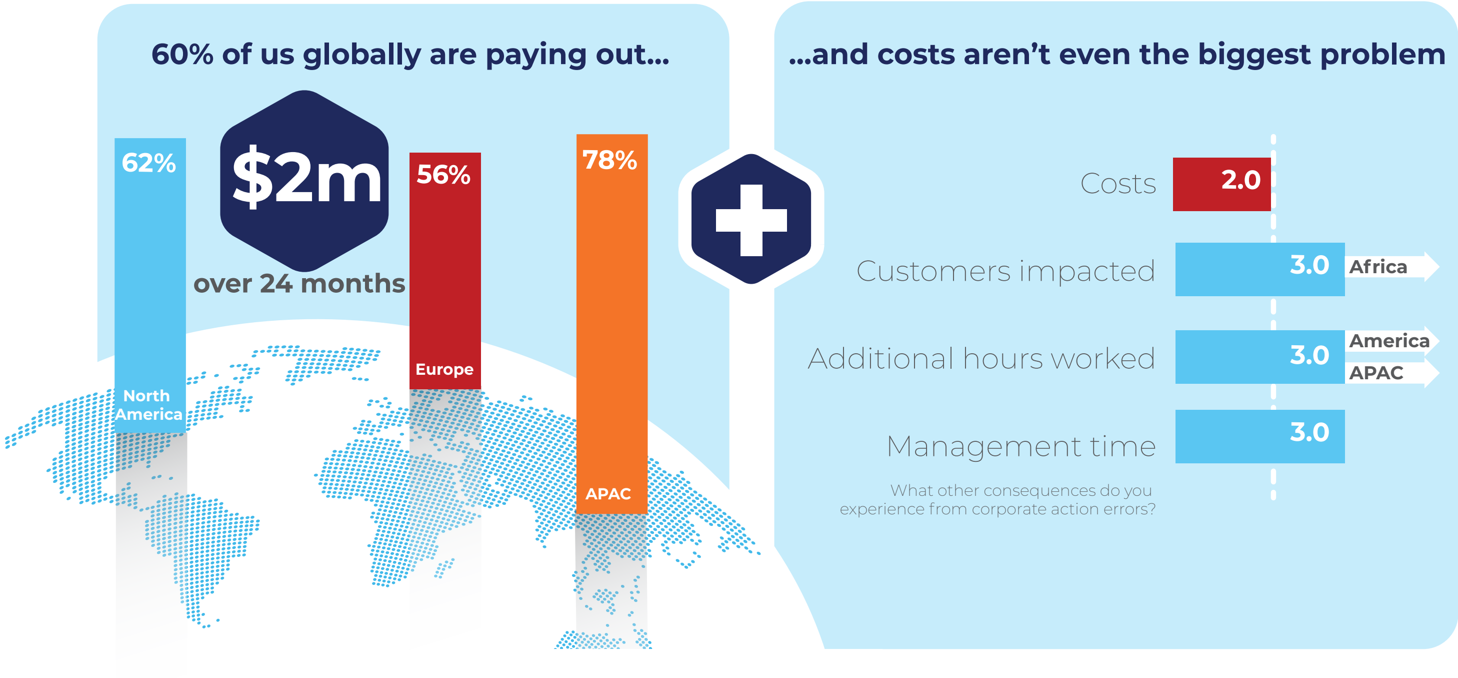
On a global basis, tax processing and reclaims are consistently highlighted as the most acutely manual activities across the global corporate action lifecycle. With multiple legal opinions often required in order to interpret an event, the mere act of defining the terms of a corporate event (let alone inputting those terms into a standardised system) is a huge challenge. Equally, market authorities across the world continue to require wet signatures for reclaims, creating not only risks around manual intervention but also adding significant latency to the overall processing cycle for investors. Fortunately, the extraordinary market conditions of 2020 have offered some temporary respite in this space (with some authorities accepting electronic documentation and signatures), and so there may be grounds for optimism around lasting change in this space.

"It feels very 1980s to still be processing corporate actions on paper"

	Challenges automating with market infrastructures / counterparties	Errors in data	Incomplete data (and need for enrichment)	Over-reliance on manual processing (inc. paper submissions)	Poor data timeliness	Regional variances preventing standardisation	System capability limitations
1. Sourcing	20%	10%	20%	17%	7%	10%	14%
2. Validation	16%	14%	20%	13%	11%	10%	16%
3. Entitlements calculation	16%	5%	19%	11%	11%	11%	27%
4. Notifications	16%	8%	22%	14%	5%	8%	27%
5. Instruction processing	24%	4%	6%	24%	10%	8%	24%
6. Allocation/Distribution	17%	9%	17%	9%	6%	11%	31%
7. Cash forecasting and management	15%	8%	8%	10%	15%	10%	33%
8. Tax claims processing	20%	8%	16%	16%	8%	19%	13%
9. Client servicing	12%	2%	14%	25%	10%	10%	27%

Figure 9: Key challenges in corporate action processing – across the lifecycle

WHAT ARE THESE PROBLEMS COSTING US? THE HIDDEN CASE FOR CHANGE



The downstream consequences of these issues are much more compelling and urgent than many would think, owing to a range of hidden costs that often escape broad attention.

That **60% of firms are paying out more than USD 2million in corporate action errors** today is no surprise to many industry professionals. But what escapes even their attention is the fact that these major errors cost more in the volume of extra hours worked (usually as part of an "all-hands-on-deck" remedial SWOT team for 3-4 days) and in the amount of senior management intervention than they do in dollars and cents. Add to that the potential client revenue losses from failures (i.e. where clients move their custody or investments elsewhere) and the additional FX costs (if there is a currency conversion involved) and an expensive problem quickly appears to be untenable.

Yet, alarmingly, the continuing nature of these events over decades has meant that many organisations now have provisioning funds set aside annually to cover the (near-certain) cost of errors year on year – which cause a major distortion on how corporate action efficiency is managed. If errors cost a bank USD7 million in a year, but their provisions are for USD10 million, then the bank has a positive result – as it is doing "better than expected" by USD3 million. Under these circumstances it is no wonder that errors can continue to be allowed to happen.

Outside the scope of major errors, manual failures also trigger **a steady stream of high-volume, lower quantity costs** – ranging from USD100,000 to USD500,000 each. Far less visible to management and risk committees, these errors are especially dangerous partly because their collective value far outweighs that of the major payouts and partly because they exert a continuing and consistent drain on resources that is much harder to identify. Remediation and error handling becomes a business-as-usual activity.

Type and Cost of Error	USD 0	USD 1k-500k	USD 501k-1m	USD 1-1.5m	USD 1.5-2m	> USD 2m	Grand total
Custody: Position keeping and maintenance	3%	8%	2%	1%	1%	13%	28%
Customer / 3rd party account servicing (e.g. custodians)	2%	7%	2%	1%	1%	10%	22%
Funding: Cash flow management	0%	3%	1%	1%	1%	9%	15%
Shareholder governance	3%	8%	1%	1%	1%	13%	27%
Trading: Arbitrage opportunities	0%	1%	0%	1%	1%	2%	4%

Figure 10: The cost of corporate action errors

Hidden behind the cost of errors is the cost of trying to manage data quality on a consistent basis. As organisations invest millions in a seemingly endless pursuit to clean their corporate action data against more and more sources in the quest for a truly 'golden copy' their system and data vendor costs are spiralling. Given a lack of confidence in underlying data quality, organisations and counterparties are then forced to over-compensate by expending significant resources in manually re-checking event data before it can be used. By the time 8-eyes have validated a particular event announcement, the arbitrage trader could well have lost their advantage entirely.

Today a new, third problem, is also presenting itself. In the face of SRD II and the growth of structured products as an asset class, banks are now faced with a growing data-mapping challenge as they are forced to link ultimate holders of securities (UBOs) to disclosure requests; or to map corporate events on underlying securities to their respective structured notes – all within increasingly stringent time-frames (driven by regulators or by increasingly demanding customers).

At the least visible end of the spectrum are the losses that are defined solely in terms of opportunity costs. For every elective corporate action that follows the default option (for example in the case of dividends), significant profits are potentially left unrealized simply by investors failing to opt for the more profitable option (i.e. securities over cash or vice versa). Estimated by some studies to be worth more than USD1 billion to the industry each year, the opportunity cost of poor corporate action management may be even larger than the direct costs.

During the pandemic these recurring corporate action issues have taken on an additional cost – as manual processing risks became physical health risks. With many corporate action processes still requiring physical presence (for signatures, chops, etc.) a number of organisations had to insist that their back-office staff be present in their offices even during the darkest days of COVID 19. "We could never go below having 30% of our corporate actions team in the office, because papers needed signing and processing every day."

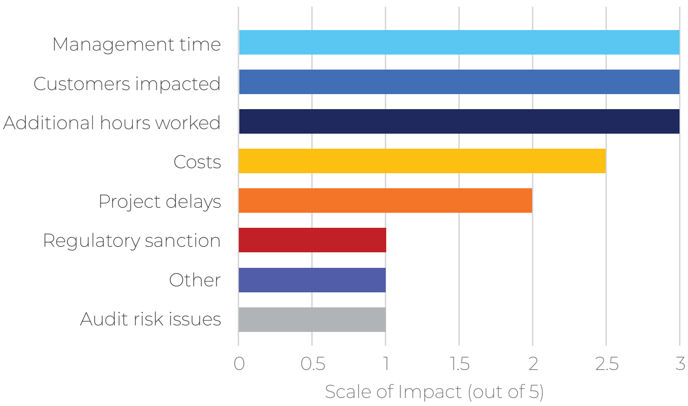


Figure 11: The hidden cost of corporate action errors

WHY IS THIS NEWS?

In the face of such clearly defined costs, how is it then that we have not seen more investment in corporate action automation over the last two decades? Simply put: not enough people know there is a problem.

Yes, those in the back office (who live with and face these corporate action challenges daily) estimate their corporate action automation levels to be around 40%, indicating a strong need for change. And yes, arbitrage traders and treasury desks are clearly dissatisfied with the quality of their corporate action processing – scoring them 2.7 and 3 out of 5 respectively. "For our Head of Equities Finance, their #1 concern is corporate actions." Those in the know clearly understand there is a problem.

But the change-makers and budget owners don't. P&L owners (in product management) estimate automation to be closer to 65%; and CEOs estimate their corporate action automation to be over 95%. Perceptions seem to be increasingly disconnected as you move out of the back office and, if senior managers are not even aware of a problem, it is unlikely that they will be willing to fund a solution.

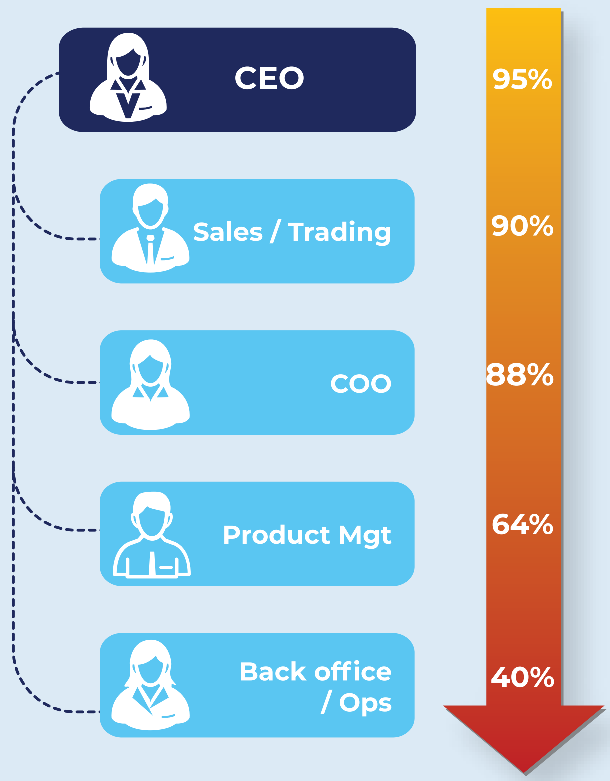
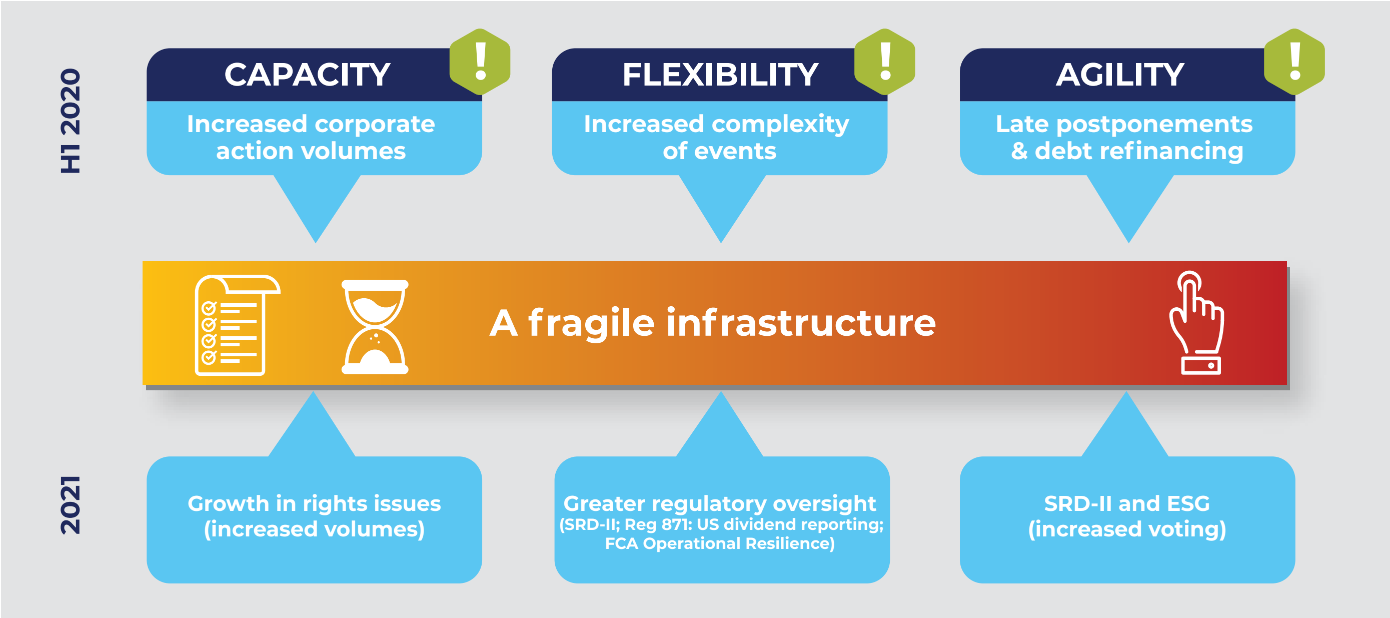


Figure 12: Perceived levels of corporate action automation from front- to back-office

WHAT'S CHANGED IN 2020/2021: FLEXIBILITY, SCALABILITY AND CAPACITY



The combination of high risks and low automation has characterised the corporate actions industry for decades and so few experienced practitioners will be surprised by the above insights. So what is it that is driving such transformational change in the back office today? What has happened from 2020 to spur us into action?

The huge market volatility and extraordinary working **conditions of 2020 exposed weaknesses at every step of the corporate action lifecycle.** Custodians were late in providing data to their clients, instructions were processed late, customer queries escalated and exceptions couldn't be dealt with. Downstream, cash forecasting came under enormous pressure as liquidity tightened. In the face of unique complexities, the largely manual processes struggled to keep up.

But by the end of the year, it was clear that these factors were secondary to a **more fundamental change in the nature of corporate actions in 2020**. As meaningful as they may have been in exposing critical pressure points in infrastructures, lasting transformation is being driven by 3 core changes.

First, **corporate actions became 'shaped' differently** – in that they have been more complex and with more conditional criteria than before. Second, these same events **behaved differently** – with dividend postponements, debt refinancing, etc. meaning that once predictable cash flows have been disrupted and the reliability of corporate action subscriptions undermined. Third, there were fundamentally **more corporate events in 2020** – as companies undertook rights issues and restructuring to deal with the challenging economic climate. "Our workloads went up by four to five times in H1 2020".

Faced with events that are carrying more, non-standardised

data elements – and which then fail to materialise on the right date – ragile infrastructures has failed to keep up. We have had to try to run a whole new range of variables through an infrastructure that is largely fixed and, faced with "break" that that creates in many processes, we have had to resort to ever growing levels of manual intervention just to manage existing event volumes. That these same events came through in higher volumes in 2020 has made a difficult situation untenable as we look ahead in 2022 and beyond.

Add to that the host of regulatory drivers (such as SRD II and CSDR) and technological change (including ISO20022, DLT, AI and others) and the business case for urgent change in corporate actions is clear.

This changing shape and behaviour of corporate actions has presented an entirely different problem from the usual capacity growth of past years. Instead of running the same events through our systems in ever greater numbers, we have had to fundamentally reshape the way we deal with events. Scalability and flexibility have replaced capacity as the core requirement for corporate action processing.

In the face of such multi-dimensional pressures, it is no surprise that those seeking the highest levels of corporate action funding are the people most acutely aware of these challenges (specifically late postponements of dividends; increased event complexity and increased event volumes).

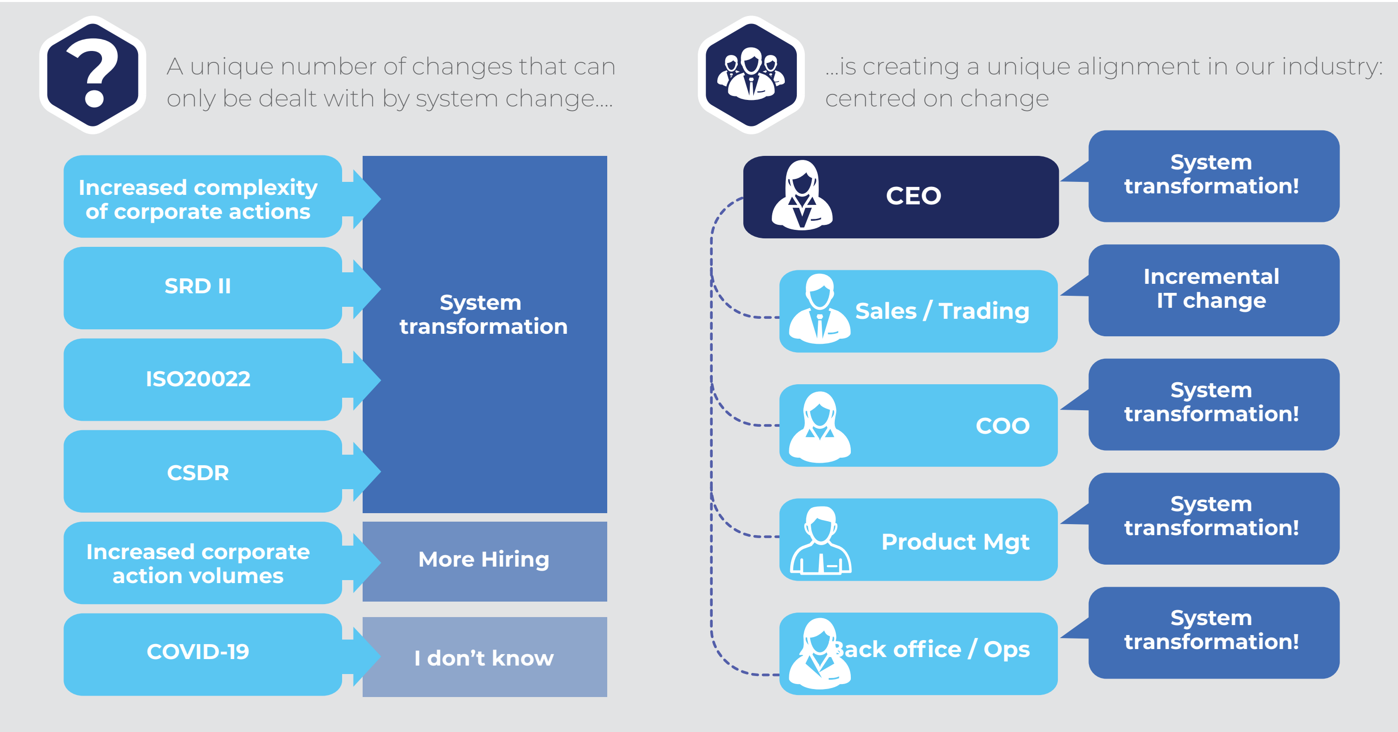
Unfortunately, there is little respite looming ahead. Whilst respondents expect these same considerations to dominate the case for change, they will be added to by a range of new factors.

Volume growth looks set to continue, as rights issues will almost certainly escalate in to the macro-economic challenges created by COVID-19, whilst the industry's strong focus on ESG will drive shareholder participation (and hence voting) volumes to new levels.

Regulation will also play a strong role in the corporate action journey. Although the deadline has officially passed, a significant portion of the industry still has yet to put in place a workable solution for SRD II (as the industry again "complies [with new regulation] and then remediates") – meaning that organisations will continue to struggle to meet the disclosure and timeliness requirements of this new regulation. CSDR will then put a growing pressure on all securities master data (and the corporate actions that drive them) as organisations begin to prepare for mandatory buy-ins and a settlement penalty regime in 2022. And finally the European Banking Authority's revised guidelines on outsourcing arrangements will require much more reporting of issues at Board levels and clearly defined risk tolerances – bringing many of the less perceived issues around corporate action processing into clear view for senior executives.

Any infrastructure that is not creaking by now is unlikely to escape strong regulatory attention in 2022.

WHEN TO MAKE THE CHANGE? NOW



Universally and consistently across all job profiles, geographies and segments in this survey, people are reaching the same conclusion.

It's time to transform our corporate actions.

From the CEO, through the front office and to the back, practitioners, end-customers and managers of corporate action processes are saying that this is no longer the time for tinkering.

The combination of challenges that were brought into 2021 and those that we have only just experienced is so complex and so variable that nothing short of deep-seated transformation will be enough. We know we have to act to stop the USD2 million errors; we know we can't use macros to meet the requirements of SRD II; or to process events in a new message structure (ISO20022); or to manage our events as they change in structure and behaviour in front of us. And we certainly can't look to anything short of system transformation if we want to do all of these at once.

And fortunately the budgets to pay for change are materialising. The average corporate action spend in 2021 was set to rise by 10% - championed by CEOs and by business-users of corporate actions (trading desks, etc.) who are pushing for closer to 20% on average.

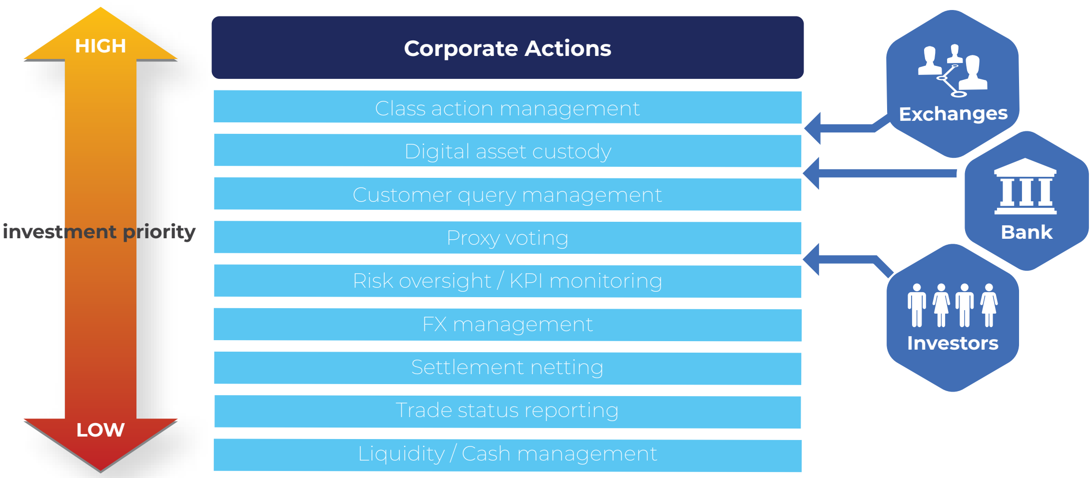


Figure 13: Corporate Actions as an Investment Priority

What's more, corporate actions are now topping the list of investment priorities (ahead of digital assets, etc.). Although the buy-side is still marginally more focused on FX management and liquidity, the sell-side seems firmly focused on driving corporate action change.

And what is behind this spend? Automation is now as much about customers as it is about colleagues. Risk reduction and regulatory compliance are mainstream drivers for change, but they sit alongside Customer Satisfaction as the leading elements of today's business case for transformation. With every vendor-client relationship now subjected to growing levels of oversight and due diligence, it is simply no longer possible to assume that continuing corporate action errors will be treated as 'white noise' as they have in the past. Fund Boards and Depobanks can no longer accept poor performance and, with SRD II now live and CSDR looming, the tolerance for any potential failures is only set to diminish.

In a client context, corporate action issues are not only undermining client revenues but they are also an obstacle to growth. With many banks focused on prime brokerage and wealth management as strategic growth areas, the risk of volume-driven errors looks set to grow. Numerous respondents have shared the view that "we are just about surviving" today in the complex areas of corporate actions – and that serious volume growth would pose significant risks to their strongly client-facing, high-growth businesses. How can you double the size of a business that is barely surviving today?

This is why participants at every stage of the investment cycle are demanding corporate action change today. From pension funds to hedge funds, all profiles of investor are now singling out corporate actions as the area for change – meaning that corporate actions have become a (negative) competitive differentiator.

But whilst all indications are that change is almost inevitable in this space, there are grounds for a small degree of scepticism. In the numerous industry working sessions that we have run as part of this research campaign, participants have almost all agreed that there has only historically been one trigger for change in corporate actions – and that is the occurrence of a major error. Banks and brokers from all regions have played out the same process many times: a major error occurs, the pay out is significant and (faced with the immediacy and scale of the payout) senior management funds system transformation in order to avoid a repeat error.

Given the costs and scale of customer-facing risks that are now implicit in corporate action errors, this 'wait-and-see' approach to corporate action change is strikingly outdated. Yet it remains to be seen whether these factors and the events of 2020 really have taken us over the threshold of change.

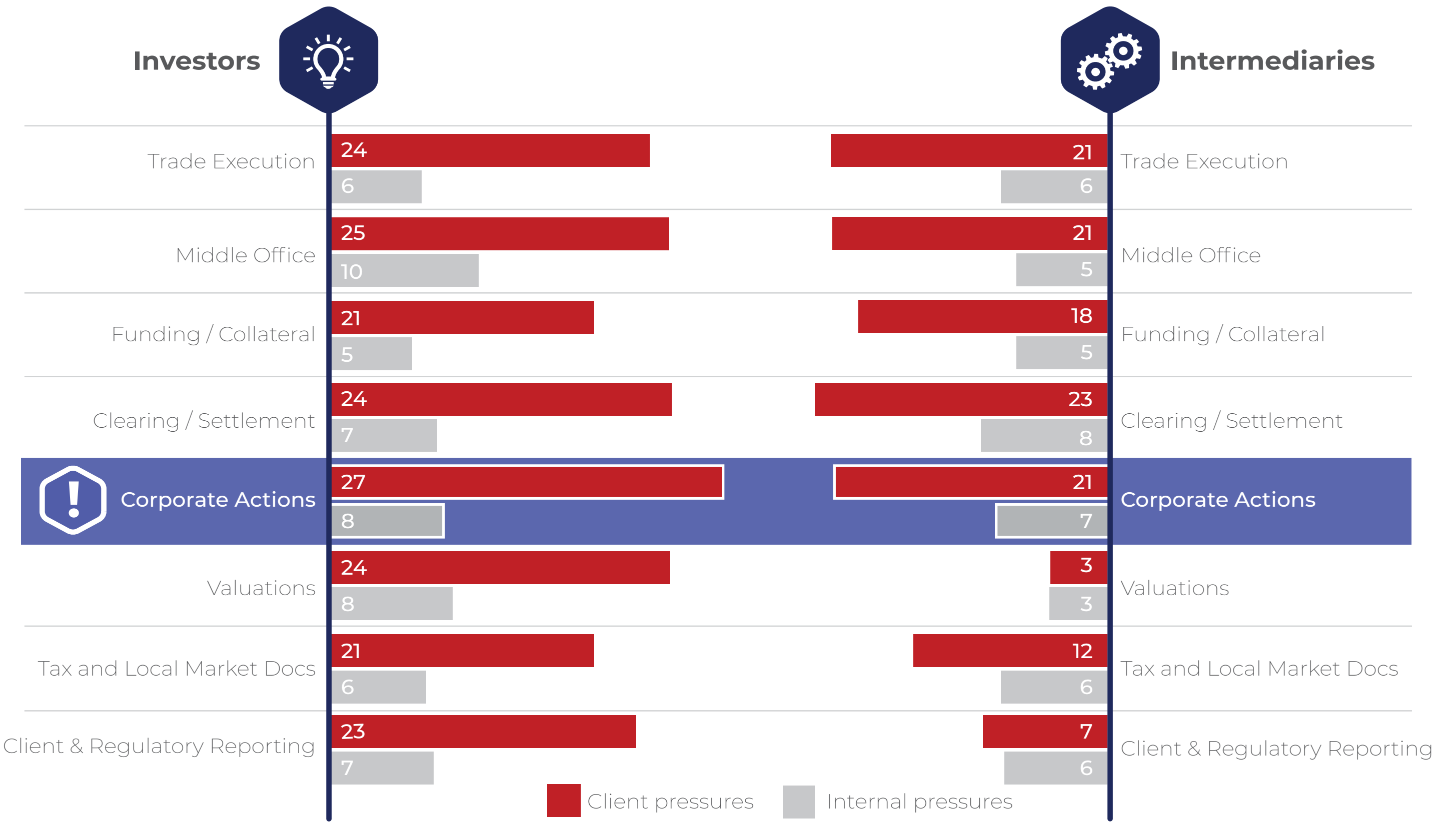


Figure 14: Where is the biggest pressure to change? The buy side and the sell side agree

WHAT STEPS ARE PEOPLE TAKING?

Across the corporate action lifecycle, views on how to achieve this deep-seated change are equally consistent. **System change** (as opposed to incremental development) **is the preferred option at every step of the chain,** from event sourcing to customer servicing, whilst "increased headcount" is not seen as relevant to any activity other than client servicing.

But where to start changing systems?

If customers are a key driver for investment, then it is no surprise that **customer-facing activities are the priority for system transformation**. Customer-centric workflows (notably in prime brokerage and wealth management) are at the centre of corporate action change, as banks strive to reduce the many potential points of failure across the corporate event's path (from CSD to bank(s) to investor and back again). Unfortunately, these workflows are themselves highly complex and difficult to simplify or standardise – leading many banks to focus on specific elements of workflow, such as calendar management or market instructions.

But it would be wrong to say that the only technological change going on today is system change. Robotics (and RPA) and new connectivity (such as APIs and ISO20022) are also playing important roles in the sell side's automation strategies. Whilst the buy-side seems entirely focused on system transformation, **RPA has a strong appeal for banks and brokers** looking to improve their event sourcing, validation and entitlement calculations; whilst APIs and ISO standards are seen as key to improving their market-facing communications (at sourcing and instruction levels).

Whilst the use of robotics and APIs may seem surprising (given that the essential problem we face today is one of limited flexibility), their appeal amongst Asian Banks and Product Managers (globally) is an indication of the urgency of the corporate action problem – and of the need for quick wins along the journey to full automation. Faced with the highest levels of manual processing of any region, Asian banks are looking for any solution that will reduce the untenable exposures to headcount and risk increases in the short term – even if that means taking steps that will have a short shelf-life. As their volumes in high-risk areas such as structured products and securities financing escalate, Asian bankers need to do whatever they can to minimise risks today.

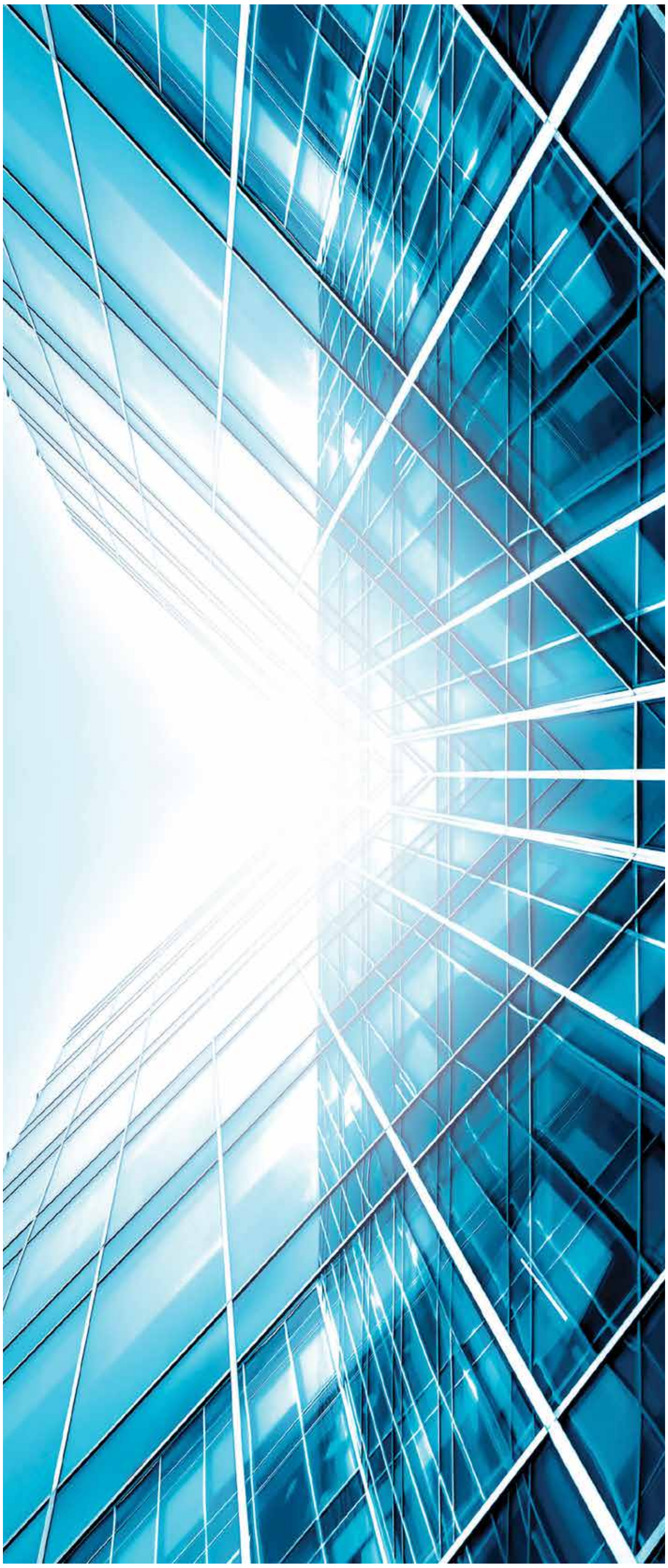
But beyond the tactically driven transformation steps (aimed largely at automating or standardising existing processes), a small number of market participants are looking at data and system change from new angles.

On the basis that not all corporate events pose the same amount of risk, some organisations are deploying event **dashboards that actively model risk** along the corporate action workflow. In some cases this can mean prioritising each event's risk based portfolio holdings, historical event risk, market risk or FX exposures; and in others it can mean modelling event risk by individual staff members (based on their experience and historical performance). If you can't automate it, you can at least know what to look out for.

Equally, the role of DLT in corporate action transformation is a continuing theme for many. Few areas of the financial services sector appear as well-suited to DLT as corporate actions. If event data and instructions were to be instantly available, globally consistent and immutable data across multiple parties then almost all of our corporate action risks and challenges would vanish. Add to that the automation benefits that smart contracts (and machine learning) would provide and you have a meaningfully different ecosystem.

Many organisations are working to realise that vision and the 'team' of transformers spans all sectors of the industry. Some securities depositories have defined clear roadmaps for this to happen; some custodians have begun working with share registrars and other ecosystem partners to build out a new generation of platforms; and Fintech providers (such as Broadridge) have live platforms available for deployment today. At the centre of all of these firms are working groups (run by ISSA, ASIFMA and others).

With 79% of financial services firms now dedicating resources to DLT deployment, all of this focus is very likely to lead to a host of transformational possibilities presenting themselves in the next 3-5 years – at a market and workflow level. Given the highly complex nature of the corporate action problem, none of these will be a silver-bullet though and so we can't afford to wait until they materialise.



WHAT CHALLENGES SHOULD WE EXPECT TO FACE?

INTERNALLY: IT'S A LONG JOURNEY TO GO-LIVE

Even with the high levels of conceptual (and financial) support for corporate action transformation, the path towards automation is not entirely straight forward.

For many of those in the planning stages, the "huge cost" of dependable vendor systems is a significant obstacle to progress – driving many to spend a few hundred thousand dollars on a strategy of continued refinements rather than a multi-million dollar, multi-year transformation journey. This is particularly true for those who see themselves as lacking the required scale in this space: "you need to be of a certain size to automate. If you have 4 people working on corporate actions, you won't be able to make the business case work."

As we have seen though, the return on investment equation is abundantly clear when the true costs of corporate action errors is factored in – and so the onus on those planning transformation is to form a realistic and empirical view of the true costs of their status quo.

Those looking to move from planning to deployment face other challenges. First, their available budgets continue to be vulnerable to regulation-driven "fire-drill" projects, where mandatory compliance to new rules immediately reduces discretionary investment budgets – leaving little spend available for corporate actions. Luckily, SRD-II (and to a degree CSDR) have given corporate action automation a higher profile for regulatory compliance and so this risk is especially low today.

But more importantly, the pressing question is "how to spend it?" With many firms focusing their attention on the most complex corporate action workflows, the widespread perception that "vendor systems don't even cover the complicated stuff" has driven many to invest reluctantly in proprietary builds. Despite the clear risks of this path, in terms of limited scale or future-proofing, many banks and investors have seen in-house development as the only practical option to date – although the recent wave of fintech-led innovation in this space is providing more choice of solutions than ever before.

But even when you have a system architecture ready, the specific nature of corporate actions means that transferring an automation project into a live platform is no certainty. "In settlements we can take an agile approach to a system roll out, but if a corporate action system isn't perfect then it risks costing us millions". If a system fails to settle a trade, deadlines can be extended or trades rolled over – but in the world of corporate actions a single missed event can immediately result in multi-million dollar costs. Corporate action system automation needs to be almost flawless from the outset and several organisations have built expensive corporate action platforms, only to roll back their deployment because of continuing imperfections and sub-99.9% STP rates. The massive risk of downside in corporate actions is both the core driver for automation projects and their core limitation.

AUTOMATION IS NOT EVEN WITHIN ANY ONE ORGANISATION'S CONTROL

Alongside internal automation, the single largest dependency highlighted across all markets is external – as we depend on the use of industry-standard messaging amongst the corporate action ecosystem to make meaningful progress.

But the biggest question here is which standard to use? How can any organisation automate at scale when they are forced to use ISO20022 in the US and in Europe, ISO15022 in some emerging markets and faxes in others? Equally, which messaging standard should you be compelling your counterparties and colleagues to use in their communications with you? The continuing existence of two messaging standards is adding additional complexity to corporate action automation projects and is, in many cases, reinforcing the perception that meaningful change can only be achieved on a local or regional scale.

As we continue to see in Europe though, industry standards are not the only factor that is keeping corporate action transformation local. Regulatory clarity and regional variances in operating rules are still the single largest obstacle to SRD II

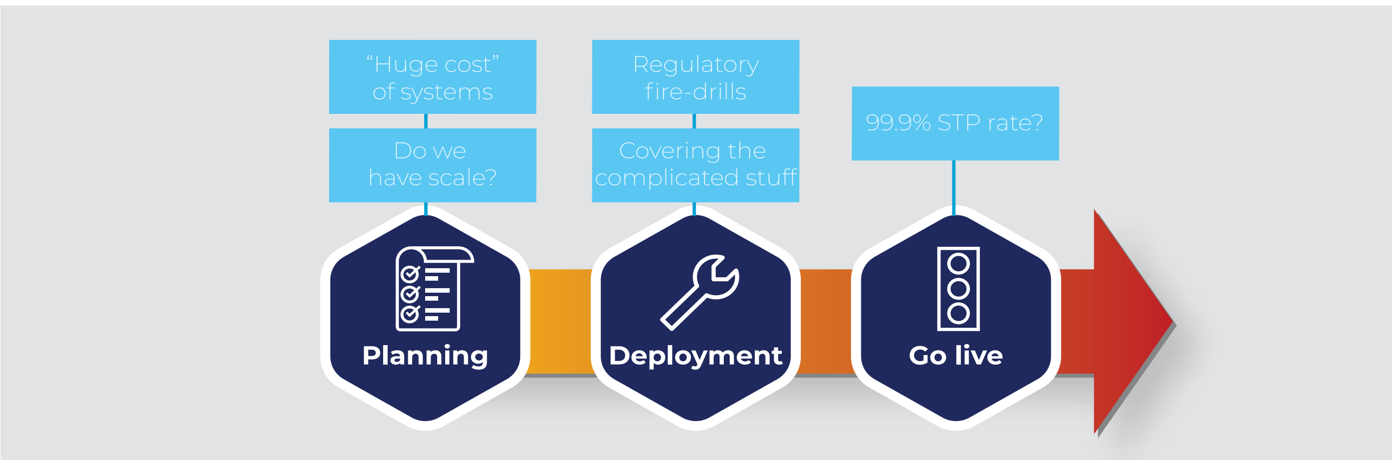


Figure 15: Core issues in corporate action automation priority

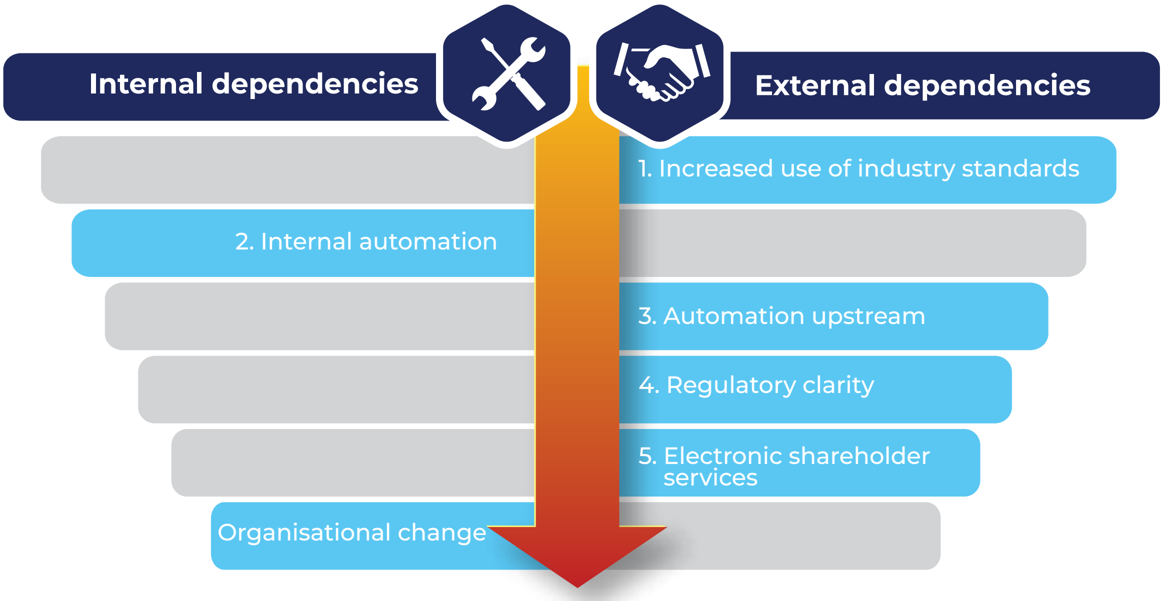
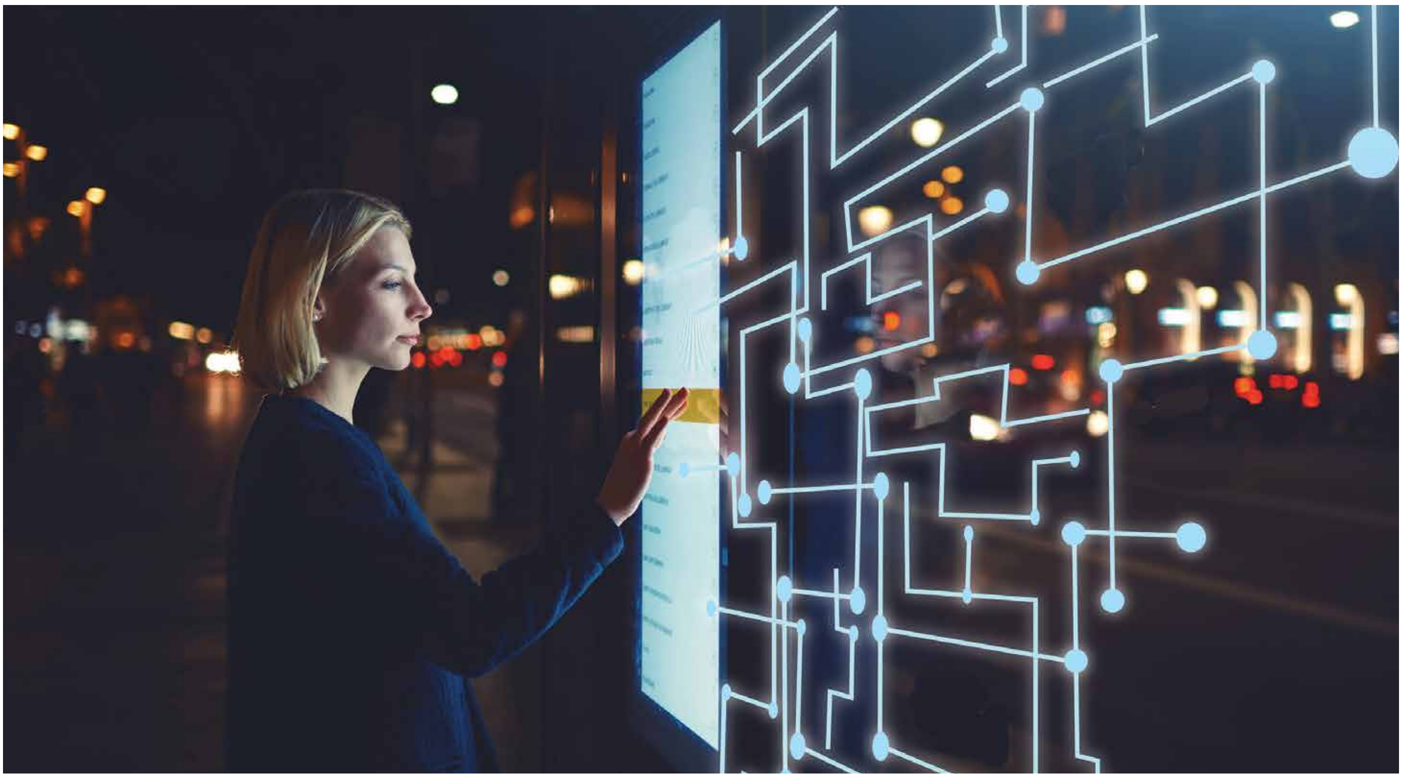


Figure 16: Leading enablers of corporate action automation

compliance, for example, especially amongst banks. Without a consistent rule book to follow across a span of operations – and with many questions still remaining after the regulatory deadline – it is difficult to build a standardised operating model at scale.

Fortunately, these challenges are diminishing over time. Regulatory rules around key changes are increasingly clear and the use of standards is growing. Driven not only by regulatory pressures (such as SRD II) but also by financial market infrastructures (notably DTCC, T2S, JASDEC, HKEX, ASX and others), the opportunities for standardised interactions between counterparties are set to grow significantly over the coming few years.



WHAT DOES THE JOURNEY LOOK LIKE?

We clearly get it. The need for corporate action automation has never been clearer or more urgently pressing – and firms of all kinds and sizes are looking to future-proof their processing infrastructures as quickly as possible. Supported by clients and colleagues across the industry, we are looking to start the corporate action transformation journey immediately, in the knowledge that change is almost inevitable. But how do we chart a path through the obstacles towards automation and where do we even start?

Feedback from market participants breaks this journey into three parts:

SHORT TERM: WHAT CAN PEOPLE FIX?

Move corporate actions out of the back office: On the assumption that large swathes of corporate action processing will remain manual for the short and medium terms, one key step is to make sure that staff competencies and compensation match their responsibilities. With an ongoing exposure of over USD2 million per year, "corporate actions risks are exponentially bigger than settlements" and are much more akin to risks faced in the middle office (where higher salaries attract more experienced and specialist expertise). Transferring corporate actions from the Back office into the Middle office would offer access to greater talent and hence help to reduce human risk.

Change the way we model corporate action risk: The business case for corporate action automation is far larger than simply the cost of the last error. We need to revise our risk modelling not only to properly capture the 'hidden costs' (of remediation work, minor payouts, etc.) but also to include the opportunity cost of missed (income) events on a proactive, forward-looking basis. By increasing transparency on the full scope of corporate action errors we can help to reshape perceptions around the priority and urgency of change.

Share our error data: Beyond our own organisations, we need to be far more transparent about corporate action losses at a market level. By sharing (non-sensitive) data openly across the industry we can help to provide essential clarity on where investment and innovation is most acutely needed and therefore help to strengthen ongoing advocacy work across the industry.

Automate tactically but scalably: Corporate actions are a huge, global problem and many organisations see the solutions as needing to be nothing short of global. Given the range of technology solutions available today, a more tactical approach to automation is increasingly relevant – where great change can be made from automating specific workflows, one at a time.

MEDIUM TERM: WHAT CAN INDUSTRY STANDARDS FIX?

Be part of standards adoption: there is no doubt that the widespread use of standards would meaningfully change the risk profile of corporate actions – but they won't be adopted on their own. We each have a role to play in both defining standards and in enforcing their adherence. As frustrating as this may be, every event type that is standardised between two counterparties (replacing faxes and emails) will have a tangible risk and cost benefit.

Drive standards in a targeted way: many of the most complicated workflows (e.g. prime brokerage and wealth management) are outside of the reach of SWIFT as a network. In taking a focused and tactical approach to deploying standards across these workflows, firms need to bring in other established channels (e.g. FIX) into the discussion, whilst avoiding the temptation to build their own bespoke connectivity (i.e. using proprietary APIs) each time.

LONG TERM: WHAT CAN TRANSFORMATIONAL TECHNOLOGY FIX?

Put corporate actions at the heart of your RFPs: Despite the pressing importance of corporate action change, many organisations continue to base their system (or outsourcing) requirements around more visible activities (such as trade processing and FX). Putting corporate actions at the centre of RFP evaluations will help to accelerate progress and remove hidden risks from flagship change projects.

Be part of industry change: 41% of firms see DLT (as an example of technological innovation) as being best advanced through industry-wide initiatives. Given the unique interdependency of the corporate action ecosystem, meaningful change requires the insight and participation of all profiles of firm. Don't go looking for your own solution – look to the industry first.

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