DIGITAL TRANSFORMATION OF TREASURY

INCLUDES EXCLUSIVE GLOBAL SURVEY RESULTS

EuroFinance

In partnership with

J.P.Morgan

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EuroFinance

A special report in partnership with

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EXECUTIVE SUMMARY

The important digital transformation now unfolding provides a wealth of opportunity for corporate treasuries – both strategically and operationally. Although the covid-19 pandemic has challenged companies in fundamental ways, creating new risks for treasurers to manage as business models and supply chains shift, it has only accelerated the digital journey in treasury.

Key takeaways from this report's interviews with a diverse group of treasury leaders around the world, supplemented by an authoritative global survey of 130 treasury professionals:

- The crisis has highlighted treasury's strategic importance to organisations – particularly its roles in liquidity and risk management
- In addition, the challenges created by the crisis have provided opportunities for treasury to contribute to and support companies' strategic and tactical responses
- It has also underscored the tangible benefits of better control of working capital through treasury set-ups
- Superior visibility of cash has gained companies invaluable flexibility over raising capital in the crisis's stressed conditions
- The crisis has provided new impetus to adoption of new technologies such as APIs, robotic process automation (RPA) and machine learning (ML)/artificial intelligence (AI): for example, almost 80% of companies have either implemented APIs already or are looking to use them in the future, according to our survey
- The greater availability of data and superior tools for analysing this resource is super-charging performance in classic treasury disciplines like cash forecasting and risk management of currency, interest rate and other exposures
- It is also leading to the development of innovative new metrics
- Challenges remain: irritants like 'wet signature' authentication are disappearing, but deglobalisation could pressure companies for an extended period
- Cyber-security also stands out as an emerging risk for a working-from-home world that seems unlikely to return fully to the office environment
- According to the survey, smaller companies struggle more with legacy challenges like data accuracy/access and paper-based processes and – perhaps as a result of these, as well as their smaller treasury teams – are more sceptical about and slower to adopt new digital tools

More generally, the agility and resilience demanded by a complex, constantly changing external environment dictate that the digital journey is never over – however progressed their set-up, treasurers will always need to keep re-evaluating capabilities and risks.

INTRODUCTION

Responses to the covid-19 pandemic accelerate two major strategic and operational shifts in corporate treasury management already under way, both with significant digital / technology components. Taken together, they represent an important digital transformation that is still unfolding but provides a wealth of opportunity for treasuries.

Strategically, treasury teams are increasingly stepping out of their traditional roles to contribute to broader initiatives within their organisations. These include changes in strategy and business model, such as Norwegian oil and gas company Equinor's offering of renewable energy or Pearson's pivot from publishing to digital-first 'learning company'.

Treasury's deep understanding of payment models and risks gives it a seat at this high-level table.

Covid-19 has added further momentum to this trend. Companies have been challenged as never before, with physical outlets closed, supply chains disrupted and the online environment increasingly central. Strategic and tactical responses have had to be rapid – and treasury has had both the opportunity to contribute to these and the responsibility of supporting them.

More generally, the crisis – which saw funding markets freeze in its early phase, while counterparty risk remains elevated even after central bank intervention has unfrozen liquidity – has also highlighted treasury's strategic importance to organisations. Its classic disciplines of liquidity and risk management have been centre stage throughout.

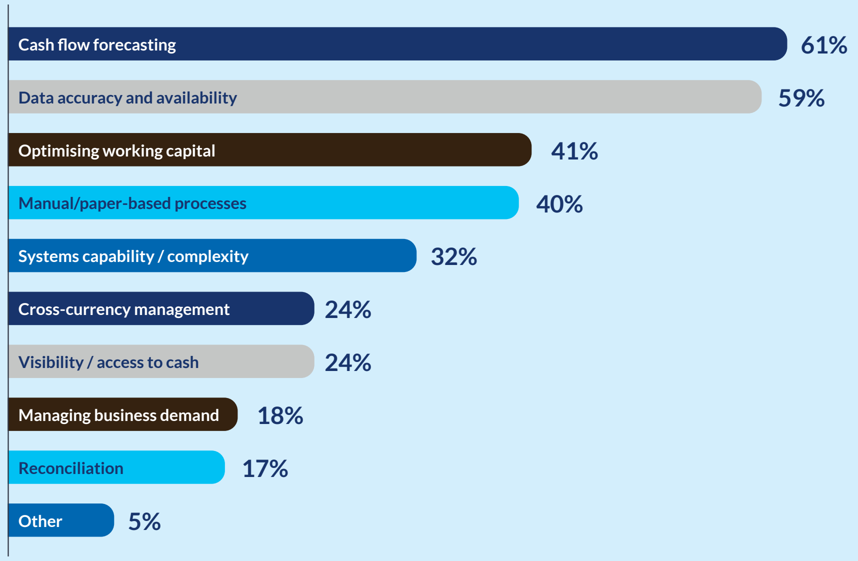
This exceptional period has also highlighted the tangible benefits for companies with better control of working capital through their treasury set-ups. In particular, superior visibility of cash has granted them invaluable flexibility over raising capital in the crisis's stressed conditions.

Operationally, treasury is making increasing use of new technologies such as APIs, robotic process automation (RPA) and machine learning (ML)/artificial intelligence (AI) as it addresses its perennial challenges across cash and risk. Adoption has not been uniform, but the direction of travel – sped up further by the crisis – is clear. Only 10% of respondents do not expect ML/AI to be of significant benefit, for example.

WHAT ARE THE MOST IMPORTANT CHALLENGES YOU FACE IN TREASURY? (PLEASE SELECT YOUR TOP THREE CHALLENGES)

DATA VITAL FOR DIGITISATION, BUT REMAINS A CHALLENGE

With digital technologies so vital to modern treasury practice, treasurers regard data accuracy and availability as one of their two most important challenges. Nearly 60% cite it, ahead of traditional treasury tasks such as optimising working capital and currency management.



Clearly, data is vital to this digitisation process. Our global survey of 130 treasury professionals shows that companies are investing in and enhancing their data capabilities (as many as half of those surveyed) to support their transformation.

At the same time, data remains a limiting factor for many. A quarter describe data accuracy and availability as a major challenge, while nearly 60% view it as one of their two largest treasury challenges.

Other challenges remain too. Irritants like 'wet signature' authentication are passing into history, but deglobalisation is a secular trend that is likely to pressure companies for an extended period – and require flexible, capable support from treasury for their strategic responses.

Moreover, cyber-security stands out as an emerging risk. While treasury's digital tools have enabled a strikingly smooth transition to remote working during the pandemic, they also pose significant risk that requires robust safeguarding to stay secure.

More generally, the crisis underscores a deep truth about corporate treasury: however progressed a company's set-up, the agility and resilience demanded by a complex, constantly changing external environment dictate that the digital journey is never over – the need to re-evaluate capabilities and risks will remain.

This white paper explores these developments and challenges at a broad range of major companies. Participants were selected to provide input across a diverse set of industries, geographies and treasury strategies.

Our sincere thanks to the corporate treasury professionals around the world who contributed their experience and insights so generously.

STRATEGIC DRIVERS

Even before the disruptions of the covid-19 pandemic, treasurers were increasingly stepping out of their traditional role to help their companies navigate strategic shifts and changes in business model. Digital transformation is reinforcing this trend as treasury's access to data and growing analytic capacity often adds to its potential contribution.

"Treasury is an important part in the execution of strategy. Capital distribution and funding are two main areas which are becoming even more important for companies and certainly we are a more important source of advice and business partner than ever," judges Tor Stian Kjøllesdal, Head of Internal Treasury at Equinor.

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TREASURY HAS EVOLVED OVER THE LAST FIVE YEARS FROM BEING LARGELY PERCEIVED AS A BACK-OFFICE SUPPORT FUNCTION TO AN INTEGRAL VALUE-ADDED ASPECT OF THE BUSINESS

Treasury is also playing lead roles in the company's initiatives to become 'future-fit' through new ways of working and new models of the people and skills it needs, he notes.

These inputs reflect a broad upgrade. "Treasury has evolved over the last five years from being largely perceived as a back-office support function to an integral value-added aspect of the business," agrees Scott Lambert, Treasury Managing Director and Assistant Treasurer at US health insurer Cigna.

Scott Lambert
Treasury Managing Director
& Assistant Treasurer, Cigna

Engagement with the rest of the organisation is central to this. "The key for treasury to add value to the business is communication and collaboration," concludes Todd Yoder, Director of Global Corporate Treasury at Fluor, who also serves as the US engineering firm's 'Innovation Catalyst'.

Debbie Kaya, Senior Director, Treasury reports having "often pushed the business" at tech giant Cisco. "They're generally pretty receptive to treasury suggestions as long as we can show benefits, which may not be immediate," she adds.

Meanwhile, the pandemic has highlighted the connection between strategic input and treasury set-up. Treasuries with advanced systems and data capacity are better positioned to add value to the rest of their organisation.

Bruce Edlund, Senior Director, Assistant Treasurer at software firm Citrix, "definitely" agrees that treasury is able to contribute through cultivating a data analytics skillset.

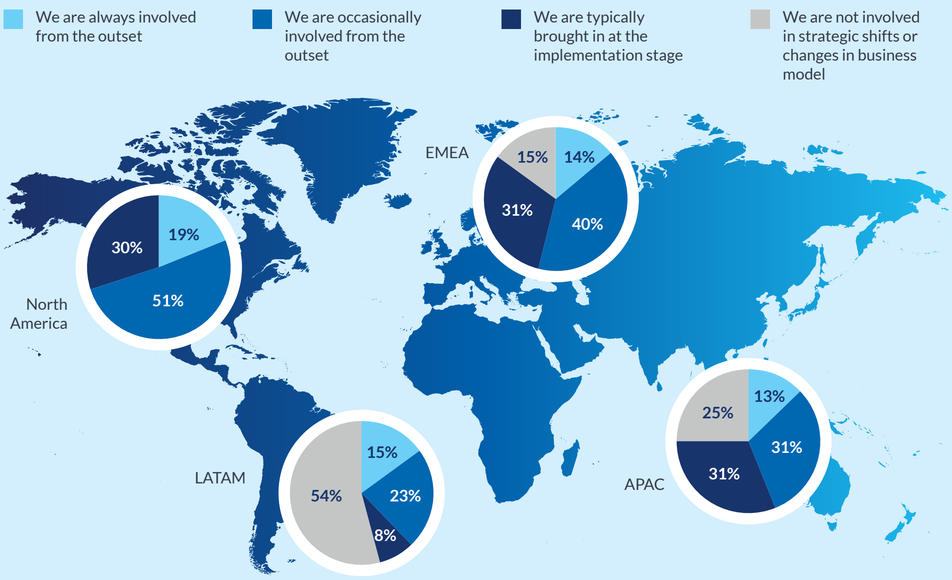
"There is a very strong connection between the digital journey and the ability to be an informer of strategy, rather than an inheritor," adds Tristan Attenborough, Head of EMEA Corporate Sales at J.P. Morgan.

MAJORITY OF TREASURIES INVOLVED STRATEGICALLY

Over half of treasuries (56%) are now involved in their companies' strategic shifts or changes in business model from the outset. Only 16% are not involved, though this proportion rises significantly at smaller companies to around 25%.

The degree of involvement also varies notably between regions. While almost 70% of companies in North America sometimes or always involve treasury from the outset, this declines to little over a third in Latin America (38%) and under half in Asia-Pacific (44%).

WHEN IS TREASURY BROUGHT IN TO HELP YOUR COMPANY NAVIGATE STRATEGIC SHIFTS AND CHANGES IN BUSINESS MODEL?



IF THE BUSINESS MODEL CHANGES (THROUGH DEGLOBALISATION, FOR EXAMPLE) WE FOLLOW AND SUPPORT, SEE HOW WE CAN STREAMLINE AND ENSURE THAT OUR EXPERTISE IS PROVIDED

Wolfgang Ratheiser
VP Corporate Finance & Treasury, Porsche

CONSULTING MODEL

"If the business model changes (through deglobalisation, for example) we follow and support, see how we can streamline and ensure that our expertise is provided," adds Wolfgang Ratheiser, VP Corporate Finance and Treasury at luxury car manufacturer Porsche.

This consulting model chimes with other companies. Lambert "expects the treasury evolution to continue toward a greater consultative function and provider of analytic support" in future.

He also points to the health insurer's embedded Treasury Consulting Team. This helps optimise banking arrangements and payments for operational groups.

Equinor and Pearson report similar partnerships. "In our business, where we can be really helpful is in subscription models, payments, insurance and analysis of cash flows – areas the business might want to focus on to improve performance in cash conversion," notes James Kelly, Group Treasurer at Pearson.

PANDEMIC IMPULSE

While the covid-19 pandemic has challenged companies from many sectors and geographies, sometimes profoundly, treasurers are nearly unanimous that it has added momentum their digital transformation. This is true both of those still at an early stage and those that had made significant progress before March.

A WIDER ADOPTION OF DIGITAL MINDSET AND CULTURE, AND SHEDDING OF PREVIOUS CONSERVATISM RESISTANT TO CHANGE

Jonathan Sanders
Head of Payments, Pleo

Almost every interviewee describes the impact of lockdowns and extended periods of working from home as an 'acceleration' of their digital journey – even while managing increases in market, counterparty and supply chain risk. Survey respondents echo this, with over half (56%) encouraged to accelerate their digital transformation by the pandemic.

The inability to use legacy processes remotely and other departments' need for their input "led to a wider adoption of digital mindset and culture, and shedding of previous conservatism resistant to change," believes Jonathan Sanders, Head of Payments at smart card company Pleo.

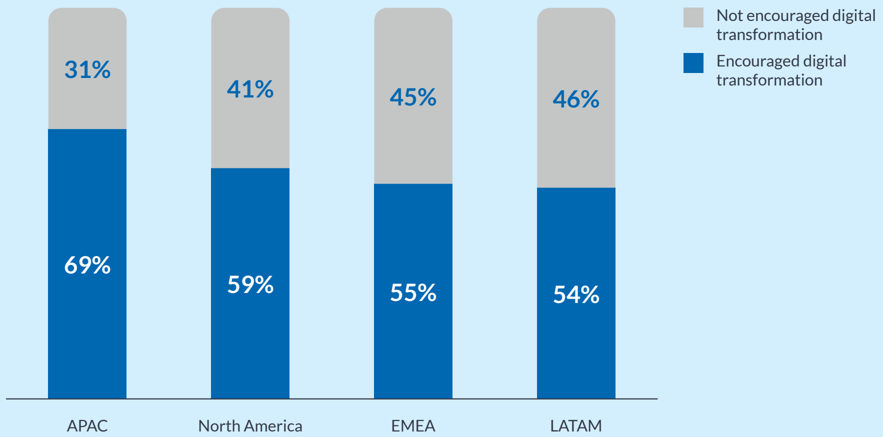
"Fear of change has transformed into appetite for it," he judges.

COVID-19 ACCELERATES DIGITAL ADOPTION

Geographically, the pandemic has encouraged digital transformation in all regions. But the extent of this varies widely. Asia-Pacific companies have seen the greatest impact, at nearly 70%, while EMEA and Latin America have lagged (55% and 54%, respectively).

Overall, smaller companies have lagged larger peers. Only just over 40% either began or accelerated implementation, compared to more than 50% of those with revenues over $2bn. Moreover, smaller companies saw more instances of implementation delayed by the pandemic.

HOW HAS THE PANDEMIC IMPACTED THE DIGITAL TRANSFORMATION OF YOUR TREASURY?



For some clients the crisis made adoption of digital tools a "necessity", according to Lia Cao, Global Head of Wholesale Payments Solutions and North America Head of Treasury Services Corporate Sales at J.P. Morgan. "Prior to covid companies were already exploring digital ways of coming to us. Covid has accelerated the move to digitization and is now table stakes for our clients."

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EVEN IF YOU ARE SUPER-PROGRESSED, YOU WILL NEED TO BE RE-EVALUATING YOUR DIGITAL JOURNEY

Tristan Attenborough
Head of EMEA Corporate Sales, J.P. Morgan

The pandemic "bumped technology up the list of strategy discussions", agrees Yoder at Fluor.

The crisis also highlighted the strategic importance of a treasury function, Cao notes. "Treasury has been in the centre of the pandemic for many large companies, managing risk and liquidity."

Equally, the pandemic has brought home an unavoidable conclusion for even the most advanced companies – those operating market-leading treasury systems with significant integration to the rest of their technology infrastructure – J.P. Morgan's Attenborough concludes.

"Covid proves you are never 'done' – you've always got to think about agility and resilience," he argues. "Even if you are super-progressed, you will need to be re-evaluating your digital journey."

CRISIS NAVIGATION

Digital tools enabled treasurers to navigate the crisis with striking effectiveness. In a period of what Sanders at Pleo describes as "immense" focus on cash optimisation, they could give a "super-clear" picture of flows, hour by hour, while controlling payables and gaining insight into receivables.

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IT HAS A TREMENDOUS IMPACT ON WORKING CAPITAL IF YOU RELEASE CASH TRAPPED IN MARKETS. THAT EMPHASISES THE IMPORTANCE AND REAL TANGIBLE BENEFITS OF DATA VISIBILITY

Lia Cao
Global Head of Wholesale Payments Solutions and North America Head of Treasury Services Corporate Sales, J.P. Morgan

"Leveraging open banking to create unified view of all incoming flows enables treasury to build real-time insight to bring value to the CFO in these times," he says.

Edlund at Citrix agrees that he "did feel that need for more data amid the crisis". This led treasury to run scenarios and work more with teams like AP and AR "to pull together a more global cash forecast".

Companies with better control of working capital through their treasury set-ups have reaped benefits during the crisis, such as greater flexibility over raising capital. "It has a tremendous impact on working capital if you release cash trapped in markets. Maybe you don't have to issue expensive debt. That emphasises the importance and real tangible benefits of data visibility," notes Cao at J.P. Morgan.

The crisis also impacted many companies' supply chains, necessitating rapid shifts in suppliers with new contract terms and exposures. Some firms have also sought to tilt their business models towards the online environment.

These changes have challenged treasuries to respond at pace with agility and control. "Evolving risks require absolute tightness in systems, processes and controls," believes Attenborough.

THE DASH FOR DASHBOARDS

As treasury grows more digital, the use of application programming interfaces (APIs) is reconfiguring not only internal and external data flows but treasurers' expectations of connectivity. Combining their own, bank and other service providers' APIs into data 'dashboards' moves them closer to the holy grail of a real-time overview of all treasury positions and risks.

Treasurers' appetite for APIs is notable. While not all have yet made substantial progress in implementing them, most are highly positive towards the technology and see great scope for making it a core element of their digital strategy.

"It's a given that it's going to happen," says one.

"APIs are now more front of mind for corporates," agrees Sanders at Pleo, which is working 'very aggressively' with banks and service providers to increase the availability and documentation of treasury APIs.

Once they adopt an 'API mindset' and use cases proliferate, he anticipates nuances in the kinds of in-house dashboards companies create. Industrial groups might focus on long-term cash forecasting while e-commerce companies' focus could be nearer-term.

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TREASURY SHOULD BE THINKING MORE STRATEGICALLY. IF WE ARE CREATING, AGGREGATING, ASSIMILATING DATA, WE SHOULD BE THINKING ABOUT HOW WE WILL ALLOW SPECIFIC STAKEHOLDERS ACCESS ACROSS THE BUSINESS

Todd Yoder
Director of Global Corporate Treasury, Fluor

Cigna built an API tool to support the claims settlement process, Lambert notes.

"Super interested" Citrix is exploring APIs as a way of leapfrogging the limitations of traditional Swift/host-to-host connections. For crucial payments (debt, for example) the firm tends to go back to online bank portals "for a more real-time view", according to Edlund.

Companies are increasingly seeing the value of using APIs in improving their internal and external data management, reports Yoder at Fluor. "It isn't just banking. Treasury should be thinking more strategically. If we are creating, aggregating, assimilating data, we should be thinking about how we will allow specific stakeholders access across the business."

Some companies are still searching for optimal API use cases. For example, Cisco is "really being careful to find where APIs make the best sense," says Kaya.

Pearson sees APIs' potential flexibility and visibility benefits. But Kelly regards them as "requiring a significant investment of time and effort to replace our existing Swift connections".

Some treasurers see blockchain as facing logistical and political challenges to taking off, however - especially with not all banks equally focused on it.

Despite the long preference in corporate treasury for bank-agnostic approaches, J.P. Morgan argues that the level of agility that the future of APIs and real-time technology will require should make it acceptable for companies to soften this stance.

Attenborough characterises this as being “not reliant on bank systems, but collaborating”.

The corporate/bank collaboration theme has deepened since the pandemic, according to Cao, who reports a “huge spike in API adoption” that will create valuable data for corporate users. “18 months ago we were pushing the expansion of API capacity. Now it is a two-way communication where there is a pull from clients who are asking, ‘Do you have an API solution for X’?”

See our global survey respondents’ positive stance on APIs visualised on p16.

DATA DIMENSION

Data is a crucial dimension of treasury's digital transformation. As well as a driver of their growing strategic contribution, treasurers view the greater availability of data and superior tools for analysing this resource as a way of super-charging their performance in classic treasury disciplines like cash forecasting and risk management of currency, interest rate and other exposures.

This includes the development of innovative new metrics.

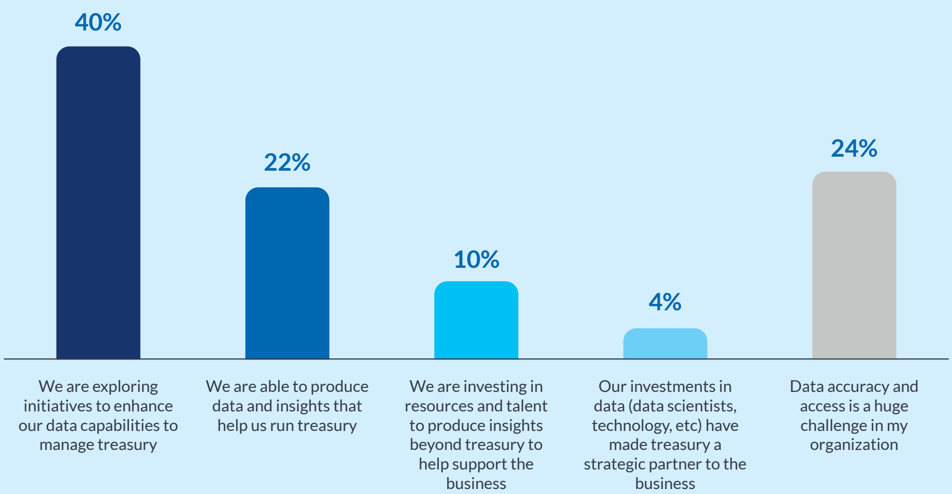
Moreover, it feeds APIs and enables the move towards real-time services and information flows.

ENHANCING DATA CAPABILITIES

40% of companies are exploring initiatives to enhance their data capabilities in treasury. A further one-third have already invested significantly in these.

The leading-edge 4% report that their data capabilities - sometimes including data scientists - even enable them to add strategic value to their organisations. These are drawn exclusively from larger companies (revenues of $5bn and above).

WHAT IS THE ROLE OF DATA WITHIN YOUR TREASURY? (PLEASE SELECT THE OPTION CLOSEST TO YOUR EXPERIENCE)



Better data "offers the potential to make much more informed decisions," says a treasury executive at a resources company, who emphasises the need for clear questions in the interrogation of data.

With storage becoming more affordable, the creation of data 'lakes' to manage big data is increasing while query tools are also improving, adds Cigna's Lambert. "Essentially, we can access discrete data on demand."

Indeed, the volume of data now available (both structured and unstructured) makes it "important to have a holistic approach with the near term and long term in mind," argues Yoder at Fluor. "We have technology now that allows the 'real-time' piece that we did not have available to us just a few years ago."

Equinor's Kjøllesdal is "definitely curious" to see whether data can be an enabler both of efficiency and of insights. He sees clear benefits from dashboards, but is "also interested to see if data can transform the way we run treasury, if we can rely more on that data".

While acknowledging the many benefits of data's increased availability, including a new capacity to "pick up process issues", Pearson's Kelly cautions that "historic data only gets you so far and often the data most needed isn't available" – typically because it relates to the future. "So we are always looking for new lead indicators to help with prediction."

Attenborough at J.P. Morgan argues that the value of real-time data to companies depends on industry. So while it is an "absolute imperative" for direct to consumer sectors (if companies' systems are capable of handling it through APIs), this may not be so in all industries. "It is important to ask 'where does real-time data add value to my business?' As such, some are likely to find elements of real-time helpful but there is also a role for scalable data in batch form as well," he judges.

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BREAKING POTENTIAL METRICS DOWN INTO DIFFERENT CATEGORIES AND SEEKING TO MAKE THEM ACTIONABLE WITH TIME, FINANCIAL AND OPERATIONAL ELEMENTS

Debbie Kaya
Senior Director, Treasury, Cisco

MOMENTUM IN METRICS

One notable development is the emergence of new data metrics. "I'm really proud of what the team has done in this area – breaking potential metrics down into different categories and seeking to make them actionable with time, financial and operational elements," says Kaya

In particular, the firm is starting to use 'risk-weighted' metrics. For example, when it acquires new entities it factors in everything from the length of actions around bank accounts to how much cash is at risk and which bank (a major banking partner of one never dealt with before).

Moreover, other finance functions often underestimate the amount of data treasury holds, Ratheiser believes – on customer behaviour in shops (heatmaps showing when they enter and what they buy), for example.

SCIENTIFIC SKILLS

One likely future trend: data scientists – "experts who know how to query and analyse data" – will increasingly integrate into treasury teams, Lambert believes.

Already treasury skillsets in data are strengthening notably. "Team members have some of the best technical and analytic skills for their role levels," judges Kelly.

All treasury team members should probably take data structuring and coding courses to prepare for the future, a number of interviewees suggest - "everyone from new joiners to the group treasurer", as one puts it.

Ratheiser adds that data skills are most useful in treasury in combination with a grasp of the field. “You still need treasury understanding and knowledge,” he believes.

ROBOTIC RESERVATION

Treasurers are moderately enthusiastic about robotic process automation (RPA), but few treat it as an essential technology. Instead most see the greatest scope for it in ancillary areas to treasury with particularly high volumes of repetitive tasks, such as accounts receivable/payable, tax, credit and collections.

A common view is that RPA is a fairly primitive form of automation likely to be superceded as applications of machine learning (ML) and artificial intelligence (AI) gain traction. Accordingly, a majority of interviewees do not view it as a long-term component of their digital strategy.

“It may be a core product in some instances, but in the long term it will be more marginal,” judges Sanders at Pleo. He regards RPA as a product that belongs more to the era of transition from physical to digital processes than to the eventual natively digital era to come.

Even so, some leading companies find significant value in RPA. Equinor has been using the technology for three years and continues to explore it “as a way of relieving capacity and increasing efficiency and control in some points of a complex treasury process”, says Kjøllesdal.

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A WAY OF RELIEVING CAPACITY AND INCREASING EFFICIENCY AND CONTROL IN SOME POINTS OF A COMPLEX TREASURY PROCESS

Tor Stian Kjøllesdal
Head of Internal Treasury, Equinor

He cautions, though, that RPA is not straightforward to implement. “It doesn’t come by itself.”

Pearson has made extensive use of RPA within its TMS, though it has not found a need for additional standalone RPA in treasury given its high levels of automation and connectivity. It regards RPA as “quite good” for situations where more manual processes would not justify full automation (such as downloading one daily statement), according to Kelly.

Fluor’s Yoder is completing certification as an RPA developer to gain a “more advanced understanding of the technology - its capabilities and limitations for treasury” to take full advantage of the technology like committed users such as Honeywell or Spotify.

The technology is not only applicable to repetitive tasks, he believes – pointing to opportunities with large datasets as well.

Kaya at Cisco is adamant in rejecting “bots for bots’ sake – I want it to really add value”.

The resources company treasury executive has not seen benefits materialise as hoped. "It's not a saviour yet. You've got to know the process flow chart – you have to think and design a lot more than with APIs."

Kelly has a long-term objective of automating Pearson's cash management further, but would need RPA to be "slightly better" to justify using it "for all elements of the process".

APIs SEEING GREATER TRACTION

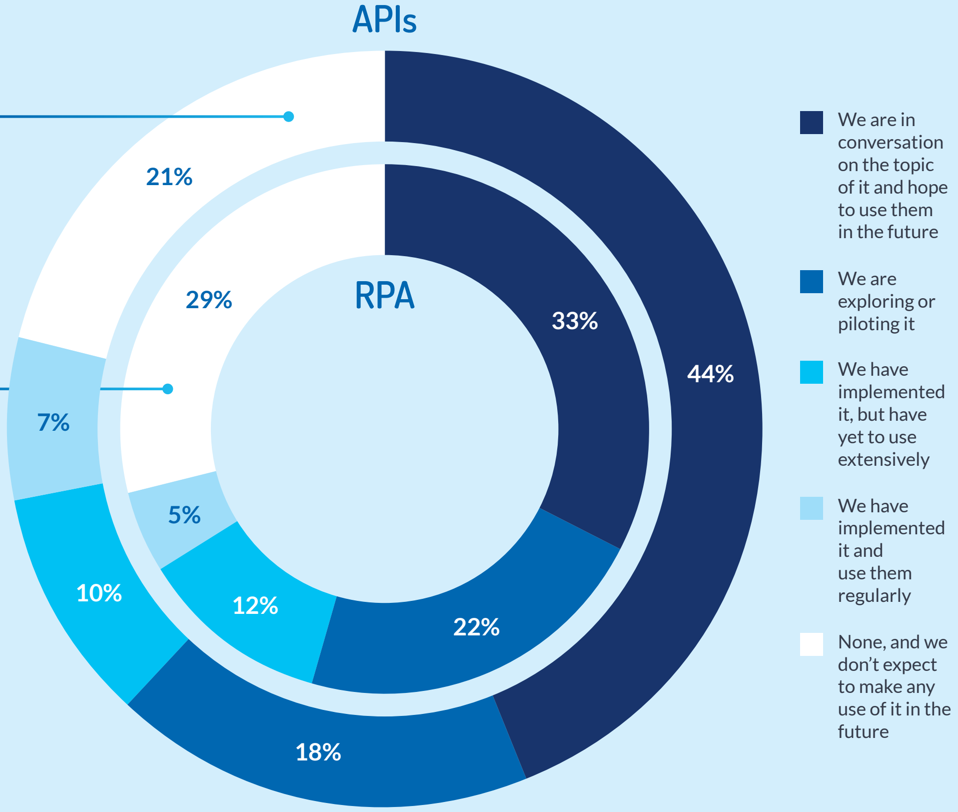
Application programming interfaces (APIs) are building traction. Almost 80% of companies have either implemented APIs already or are looking to use them in the future.

Treasurers are slightly less persuaded by robotic process automation (RPA). Nearly 30% of companies do not expect to make use of RPA in the future.

Smaller companies are generally more sceptical of both technologies than their larger peers. Over a quarter (26%) of those with revenues of $2bn or under do not expect to make use of APIs, compared to 8% of those with revenues of $50bn or more. And none in the two smallest tiers use RPA regularly, compared to up to 20% of larger firms.

HOW MUCH USE ARE YOU MAKING OF APIs IN TREASURY?

HOW MUCH USE ARE YOU MAKING OF RPA IN TREASURY?



OVERCOMING CHALLENGES

Treasuries' digital journeys are rarely linear. Besides the need for support and sponsorship from senior management, obstacles to progress range from archaic paper-based processes – sometimes internal choices, sometimes imposed by banks – to the perennial challenge of integration between treasury management systems (TMS) and enterprise resource planning (ERP) systems.

Even so, treasurers report progress on multiple fronts.

'WET' DRIED UP

Treasurers voice relief at the crisis leading banks to relax their long-standing requirement for so-called 'wet signatures' – hand-signed paper documents – to authenticate and authorise some types of transactions. This pre-digital approach still obtains in a number of jurisdictions, including the US.

"Banks have had to find workarounds to physical needs that should have been addressed three or four years ago," judges the treasury executive, who believes the pandemic "forced my team and partner banks to do things electronically" - and saw "immediate benefits".

Cigna "quickly adapted physical Treasury processes to electronic alternatives", recalls Lambert. For example, it moved bank reconciliations and wire transfer authorisations to a completely digital, secure process.

Not every bank proved accommodating in the crisis. Edlund notes one US institution continuing to require physical documents. "They insisted on the original even in the crisis."

Similarly, some banks would only communicate by phone for compliance reasons, even though Zoom can record calls too, reports Pearson's Kelly.

ERP OBSTACLE

TMS integration remains a key challenge for treasurers' digital journeys. "It is very difficult to change quickly when the TMS is so closely tied in to cash and ERP," notes the resources company treasury executive.

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A VERY MANUAL PROCESS TO GET DATA OUT IF YOU DON'T HAVE A SHARED SERVICE CENTRE

Wolfgang Ratheiser
VP Corporate Finance & Treasury, Porsche

Moreover, international groups' acquisitions and regional differences have tended to lead to multiple ERP systems with processes that vary between legal entities. As a result, "it's a very manual process to get data out if you don't have a shared service centre", comments Ratheiser at Porsche.

Even Equinor, which has had the benefit of operating on a single ERP globally for over 30 years, reports integration issues. Treasury's upgrade to SAP Hana has made the rest of the company's use of the older "an obstacle", according to Kjøllesdal.

Even so, Kjøllesdal is optimistic that next year's move to a cloud-based version will outweigh this by enabling the use of external technology. "We will have much more flexibility in utilising clever systems outside," he judges.

Similarly, Cisco's significant customisation limits its flexibility in areas such as 'on behalf of' payment structures, Kaya reports.

All the same, she views the willingness of internal partners in areas like accounting and AP as the greatest obstacle to change in areas such as file format – particularly when there is little immediate benefit. "You really have to go in and influence," she says, citing partners' adoption of XML after they understood it would provide richer data and potentially move them closer to straight-through processing.

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WE WILL HAVE MUCH MORE FLEXIBILITY IN UTILISING CLEVER SYSTEMS OUTSIDE

Tor Stian Kjøllesdal
Head of Internal Treasury,
Equinor

For cash-rich companies a further issue is a lack of integration between bank balances and investment portfolio information. "If you don't have both, you don't know your cash. It's a huge challenge," says Citrix's Edlund, who brought the two together in-house using Microsoft BI.

No commercial product appears to be available on the market to provide this holistic view.

PLATFORM PARTNERS

Treasurers' vital relationships with their banks are changing as their digital journeys progress. Virtual accounts and in-house banks are rationalising account structures, while the emergence of fintech partners alongside traditional financial players is broadening service provision.

VIRTUAL ACCOUNTS REVVING UP

Virtual accounts are winning growing acclaim from treasurers. Equinor, which has operated an in-house bank for 20 years, sees "lots of benefits" in the virtual account set-up being part of the 'on behalf of' structure it recently implemented, for example.

"We have significant incoming payments and can allocate them immediately, with balances always updated," notes Kjøllesdal. "That creates a lot of efficiencies."

In addition, Citrix is close to implementing virtual accounts and an in-house bank after a long effort to find an 'on behalf of' solution, according to Edlund.

Other companies with in-house banks are considering implementing virtual accounts too. Some view them as a potential AR solution, for example.

However, Cisco reports having not yet found suitable applications for virtual accounts. Some of its legacy set-ups also inhibit its ability to use the product, according to Kaya.

It is planning to formalise its in-house bank arrangements to align with its tax structure, though.

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OPPORTUNITY TO ENHANCE OUR BANKING PARTNERS OR PROVIDE SERVICES NOT REALLY PROVIDED NOW

Bruce Edlund
Senior Director, Assistant Treasurer, Citrix

FINTECH FOCUS

Despite their reliance on banks' balance sheet and trading capacities, treasurers are increasing focus on fintech solutions – and expect banks to work alongside their new providers.

"Now we have outsourcing partners and fintechs that really provide technology rather than what banks do," agrees Ratheiser at Porsche.

"The future's bright" for fintechs, believes Citrix's Edlund, who sees an "opportunity to enhance our banking partners or provide services not really provided now".

According to Sanders at Pleo (a fintech itself), fintechs with "differentiated products" are moving into areas where banks are the traditional providers, such as AP, FX and credit - though he also acknowledges that banks constitute one of most treasuries' prime relationships.

The crisis may have curbed more risk-averse companies' earlier enthusiasm for fintechs, however. Combined with the reputational impact of a failed payment discounting platform, some are preferring to work only with the seemingly safer option of banks for now.

"I would never give a fintech all our business in any case," notes one treasurer.

Will banks and fintechs converge over time? Although some argue for this as a result of competition and acquisitions, Kjøllesdal at Equinor doubts its likelihood. "In our segment of multinational companies, it is hard for banks to become fintechs and vice versa."

This reflects banks' regulatory burden in areas such as 'know your customer' (KYC), which fintechs could not handle and which results in banks' "fundamental lack of speed".

Instead, he calls for collaboration. "All three need to join forces to find solutions."

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EVEN MORE COLLABORATION, SOME ACQUISITIONS, AND MANY WIN-WINS COMING BOTH FOR BANKS AND FOR CORPORATES

Todd Yoder
Director of Global Corporate Treasury, Fluor

Fluor's Yoder is seeing banks investing in open source programming languages and machine learning to be stronger partners to corporates and is optimistic about the outlook. "There has been and I am confident there will be even more collaboration, some acquisitions, and many win-wins coming both for banks and for corporates."

AI: END OF THE LINE

For many machine learning (ML) and artificial intelligence (AI) represent one end-point for treasury's digital transformation. The more systems can learn from past patterns and correlations and generate predictions about the likeliest future path, the more treasury professionals can focus on exercising their expert judgements on these inputs.

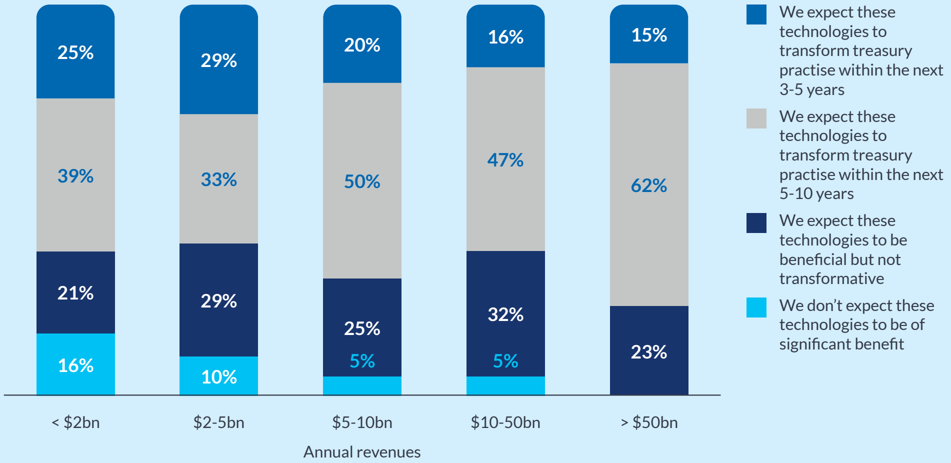
Few treasurers are yet making substantial use of ML or AI, but most agree that these will be increasingly important technologies in the coming years.

CONSENSUS ON TRANSFORMATIVE POTENTIAL

Treasurers are strikingly positive on the potential of machine learning (ML) and artificial intelligence (AI). Over 40% expect these technologies to transform treasury practice within the next 3-5 years and a further 20%-plus within 5-10 years. Only 10% do not expect them to be of significant benefit – though this assessment varies widely by company size, as does the speed of expected take-up.

Larger companies are more positive about ML/AI than their smaller peers and expect its benefits to arrive sooner. Not a single respondent in the largest category (revenue of $50bn and above) doubts these technologies' transformative potential.

HOW IMPORTANT ARE MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE TO TREASURY?



"We are curious and want to explore," affirms Kjøllesdal at Equinor. Even so, he is still "trying to understand the potential over a three to five year horizon".

One application could be ML in bank reconciliation, where the goal would be to learn from manual allocations resulting from failed transactions.

Companies such as Cisco and Porsche have also investigated the current market – though the latter's Ratheiser, who is especially interested in applicability in cash flow forecasting, reports that the models it reviewed were not "totally sufficient".

Fluor's Yoder believes overuse of the term 'AI' has led to confusion, however. "What I am seeing in treasury are cognitive technologies and machine learning."

TREASURY IS A FERTILE AREA FOR USE OF THESE TECHNOLOGIES SINCE IT HAS SO MUCH DATA THAT PATTERNS CAN BE PICKED UP

James Kelly
Group Treasurer, Pearson

PIONEER PERSPECTIVE

In contrast to most peers, Pearson is already using ML/AI. "Treasury is a fertile area for use of these technologies since it has so much data that patterns can be picked up," says Kelly, who regards them as "very beneficial, particularly in two respects: that they learn iteratively and that they are not limited to a small number of inputs."

25 or 50 inputs allows for "much more complex rule sets" than within a human team.

As a result, the system can start spotting patterns "if you get it right", he notes.

FORECASTING APPROACHES

Cash forecasting is one area where treasurers see potential to benefit from ML/AI. For example, Cigna is trialling a new Reval module that performs regression analysis and learns from it. It evaluates cash flow and supports investment strategies.

Lambert regards this as valuable, particularly in the current ultra-low interest rate environment.

Citrix too has considered an ML/AI approach to cash forecasting. But Edlund is "somewhat sceptical": while a third-party provider might be able to improve Citrix's performance, the last 20-30% "becomes such an art" – especially as potential benefits also depend on the complexity of a company's cash flows and needs.

"I'm not going to try to perfect cash forecasting to earn pennies," he says, adding that he believes there are no perfect forecasts.

One treasurer "would love" to use ML to predict when customers are going to pay, though data hygiene challenges make this a stretch.

APPENDIX:
GLOBAL TREASURY SURVEY

SURVEY DETAILS

In July-August 2020, EuroFinance conducted an online survey on digital transformation in treasury. Valid responses were received from 130 treasury professionals globally. Just over half represent companies headquartered in Europe, the Middle East and Africa (EMEA), while one-third are from firms in the Americas (21% North America, 10% Latin America). The remaining 12% answered for organisations based in the Asia-Pacific region.

Just under half of the companies surveyed operate one or more regional treasury centres away from their headquarters. The largest proportion (30%) are in EMEA, but APAC (25%) is also a significant location for these.

11 sectors were represented across respondents. Industrials was the most active (27%), followed by financials (12%) and consumer discretionary (11%). The remaining eight range from 4% to 8%.

Just over half of the companies surveyed employ 10,000 or fewer staff. A quarter are mega-firms with over 50,000 employees.

Similarly, almost half (44%) had 2019 turnover of up to $2 billion-equivalent. The remainder were split fairly evenly between four further tiers: $2-5bn (16%), $5-10bn (15%), $10-50bn (15%) and over $50bn (10%).

Over two-thirds of the treasuries surveyed have teams of up to 10 professionals (excluding ancillary areas such as credit and collections). The remainder divide equally into teams of 10-25 and over 25.

RESULTS TABLES: DIGITAL TRANSFORMATION IN TREASURY

Q1: IN WHICH REGION IS YOUR COMPANY HEADQUARTERED?

Answer choices	Response
APAC	10%
EMEA	58%
North America	23%
LATAM	9%

Q2: DO YOU OPERATE TREASURY CENTRES OUTSIDE OF YOUR HQ DOMICILE (E.G., JAPAN HQ COMPANY WITH REGIONAL TREASURY CENTRE IN EUROPE)? IF YES, SELECT ALL REGIONS THAT APPLY.

Answer choices	Response
APAC	27%
EMEA	37%
North America	18%
LATAM	16%
No, we do not operate Treasury centres outside of our HQ domicile	48%

Q3: IN WHICH INDUSTRY DOES YOUR COMPANY OPERATE?

Answer choices	Response
Energy	7%
Materials	7%
Industrials	25%
Consumer Discretionary	11%
Consumer Staples	6%
Health Care	8%
Financials	12%
Information Technology	13%
Telecommunication Services	3%
Utilities	3%
Real Estate	5%

Q4: HOW MANY EMPLOYEES DOES YOUR COMPANY HAVE?

Answer choices	Response
Up to 10k	52%
10k-50k	22%
More than 50k	26%

Q5: WHAT WAS YOUR COMPANY'S 2019 TURNOVER?

Answer choices	Response
Up to $2bn	43%
$2-5bn	16%
$5-10bn	16%
$10-50bn	14%
More than $50bn	12%

Q6: WHAT IS THE SIZE OF YOUR TREASURY TEAM (EXCLUDE ANCILLARY AREAS SUCH AS CREDIT AND COLLECTIONS)?

Answer choices	Response
1-10 people	66%
10-25 people	17%
More than 25 people	17%

Q7: WHAT ARE THE MOST IMPORTANT CHALLENGES YOU FACE IN TREASURY? (PLEASE SELECT YOUR TOP 3 CHALLENGES)

Answer choices	Response
Data accuracy and availability	59%
Manual/paper-based processes	40%
Reconciliation	17%
Systems capability / complexity	32%
Cash flow forecasting	61%
Visibility / access to cash	24%
Optimizing working capital	41%
Cross-currency management	24%
Managing business demand	18%
Are there any challenges not mentioned above that you view as equally important? Please name.	5%

Q8: WHEN IS TREASURY BROUGHT IN TO HELP YOUR COMPANY NAVIGATE STRATEGIC SHIFTS & CHANGES IN BUSINESS MODEL? (PLEASE SELECT THE OPTION CLOSEST TO YOUR EXPERIENCE)

Answer choices	Response
We are not involved in strategic shifts or changes in business model	16%
We are typically brought in at the implementation stage	28%
We are occasionally involved from the outset	40%
We are always involved from the outset	16%

Q9: HOW HAS THE PANDEMIC IMPACTED THE DIGITAL TRANSFORMATION OF YOUR TREASURY? (PLEASE SELECT THE OPTION CLOSEST TO YOUR EXPERIENCE)

Answer choices	Response
It has not made much difference	29%
It has made us begin implementing digital technologies	10%
It has made us accelerate implementing digital technologies	39%
It has made us delay our implementation	7%
It has made us explore new digital technologies	7%
We have not yet undertaken any significant digital transformation of treasury	9%

Q10: WHAT IS THE ROLE OF DATA WITHIN YOUR TREASURY? (PLEASE SELECT THE OPTION CLOSEST TO YOUR EXPERIENCE)

Answer choices	Response
Data accuracy and access is a huge challenge in my organization	24%
We are exploring initiatives to enhance our data capabilities to manage treasury	40%
We are able to produce data and insights that help us run treasury	22%
We are investing in resources and talent to produce insights beyond treasury to help support the business	10%
Our investments in data (data scientists, technology, etc) have made treasury a strategic partner to the business	4%

Q11: HAVE YOU SOUGHT TO RATIONALIZE YOUR COMPANY'S BANK ACCOUNTS? (SELECT ALL THAT APPLY)

Answer choices	Response
No, and we don't expect to do this to any extent in the future	20%
Not yet, but we expect to do this in the future	19%
Yes, through setting up an in-house bank (IHB)	28%
Yes, through implementation of virtual accounts	18%
Yes, by shifting accounts to relationship banks	42%
Yes, by closing in-country accounts and paying/collecting cross-border	8%
Yes, by other means (please specify)	4%

Q12: HOW MUCH USE ARE YOU MAKING OF APPLICATION PROGRAMMING INTERFACES (APIs) IN TREASURY?

Answer choices	Response
None, and we don't expect to make any use of APIs in the future	21%
We are in conversation on the topic of APIs and hope to use them in the future	44%
We are exploring or piloting APIs	18%
We have implemented APIs, but have yet to use extensively	10%
We have implemented APIs and use them regularly	7%

Q13: HOW IMPORTANT IS ROBOTIC PROCESS AUTOMATION (RPA) TO YOUR TREASURY?

Answer choices	Response
None, and we don't expect to make any use of RPA in the future	29%
We are in conversation on the topic of RPA and hope to use in the future	33%
We are exploring or piloting RPA	22%
We have implemented RPA, but have yet to use extensively	12%
We have implemented RPA and use regularly	5%

Q14: HOW IMPORTANT IS MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE TO TREASURY?

Answer choices	Response
We expect these technologies to transform treasury practise within the next 3-5 years	44%
We expect these technologies to transform treasury practise within the next 5-10 years	22%
We expect these technologies to be beneficial but not transformative	25%
We don't expect these technologies to be of significant benefit	10%

Q15: IF YOU SELECTED THE FINAL OPTION ABOVE ('WE DON'T EXPECT THESE TECHNOLOGIES TO BE OF SIGNIFICANT BENEFIT'), PLEASE GIVE THE KEY REASONS FOR YOUR ANSWER:

Answer choices	Response
No clear business case	42%
No long-term strategy to focus on investing in these technology	42%
Not enough skills in organization	18%
Supporting processes are difficult to change or are not ready to support the new technology	24%

Q16: ARE THERE ANY DIGITAL TECHNOLOGIES OR TOOLS NOT MENTIONED IN THIS SURVEY THAT YOU EXPECT TO BE TRANSFORMATIVE FOR TREASURY PRACTISE IN THE COMING YEARS? PLEASE NAME.

Responses
Predictive forecasting
Power BI Reporting
Blockchain - Use cases
Use of cloud-based storage now that we are finally satisfied with the security aspects
Open banking, DLT, crypto-currencies
Digital Office

Q17: PLEASE SPECIFY THE TIME HORIZON FOR YOUR EXPECTATION.

Answer choices	Response
Within the next 3-5 years	77%
Within the next 5-10 years	23%

Q18: HOW DO YOU EXPECT THE PROVISION OF FINANCIAL SERVICES TO EVOLVE IN THE NEXT 5-10 YEARS?

Answer choices	Response
Greater innovation from the banks on their own operations and for their clients	25%
Banks to partner with, and acquire more fintechs	44%
Banks to acquire fintechs	0%
Consolidation in the banking sector	11%
Working directly with fintechs to a greater extent	18%
Fewer financial service providers	3%

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