Intraday Liquidity Management: From a cost discussion to a revenue opportunity

Whitepaper
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Introduction

“Liquidity is oxygen for a financial system.”
— Ruth Porat, former CFO and executive vice president, Morgan Stanley

By optimising their management of intraday liquidity, financial institutions can avoid the hidden costs associated with not managing and forecasting their cash and liquidity requirements correctly. Why maintain unnecessarily high levels of collateral or borrow at the last minute, when the liquidity needed to fulfil your settlement obligations can be sourced from other parts of the business that are not so constrained?

This paper will explore each of these points and discuss the opportunities that financial institutions can take to transform the intraday liquidity discussion, from one of an operational burden into one that adds true business value. It will also look at how institutions can leverage next-generation technologies like cloud computing, artificial intelligence and machine learning to achieve the goals that have long eluded them: real-time pro-active management of their global intraday liquidity.

During the financial crisis of 2007–2008, financial regulators quickly realised that the financial institutions under their supervision needed to do a number of things differently if they were to minimise the chances of a crisis of this scale happening again.

The crisis brought home a number of weaknesses in the global financial system, in particular the scale of the impact arising from the interconnected nature of liquidity.

If one or more ‘systemically important’ financial institutions could not access liquidity to fulfil their payment and settlement obligations, then a liquidity shortfall in one market, or one institution, could quickly spread to markets and intermediaries in other jurisdictions.

In 2008, the Basel Committee on Banking Supervision (BCBS) published its seminal Principles for Sound Liquidity Risk Management and Supervision, which underlined the need for banks to “actively manage their intraday liquidity positions and risks to meet payment and settlement obligations on a timely basis.”1 That paper reinforced that global financial regulators want to see financial institutions moving beyond reporting their intraday liquidity positions (even with greater frequency) towards active management and control of their intraday liquidity. While this may appear to be another exercise in regulatory compliance, active intraday management offers many more benefits to both banks and their customers.

A number of forces are now combining to transform active intraday liquidity management from a ‘nice to have’ to a ‘must have’. The global trend towards real-time or instant payments requires banks to have a real-time global consolidated view of their liquidity. Collateral is also becoming scarcer and more expensive. The days of cheap and abundant liquidity cannot be taken for granted anymore.

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The BCBS’s *Principles for Sound Liquidity Risk Management and Supervision*, as a follow up to its *Sound Practices for Managing Liquidity in Banking*, re-emphasised the contribution active liquidity management can make to the smooth functioning of payment and settlement systems.²

The 2008 paper was followed by the Basel Committee’s *Monitoring Tools for Intraday Liquidity Management* (April 2013) which provided national banking supervisors with a specific set of tools for monitoring banks’ management of intraday liquidity risk, as well as forming a basis for evaluating the susceptibility of the banking system to future liquidity shocks.

Together, the BCBS papers made a series of recommendations for enhanced intraday liquidity management by financial services firms. Financial supervisory authorities have now taken these recommendations on board and added their own interpretation to varying degrees. Unsurprisingly, the UK, which had to invest billions to help resolve the liquidity crisis during the 2007–2008 market turmoil, was one of the first jurisdictions to implement these recommendations and remains at the forefront of the drive to manage intraday liquidity risks.

In 2009, the then Financial Supervisory Authority (FSA) implemented stricter rules governing liquidity management for UK banks and foreign branches of overseas banks. Under this regime, banks are required to maintain liquid asset buffers to deal with stress scenarios and to reduce their reliance on liquidity sourced from the parent or holding company. The regime also requires banks to have systems and controls to manage intraday liquidity risk and to report data on intraday liquidity usage.

This was followed, in February 2018, by the Prudential Regulation Authority’s recommendations for Pillar 2 liquidity risk assessment. When assessing a firm’s management of intraday liquidity risk, the PRA is clear that it will consider the quality and the full extent of the management tools in place: from detailed metrics and operational processes, through to stress testing and risk frameworks, and the internal policies governing them.

Financial institutions’ ability to actively manage and monitor their intraday liquidity is now a priority for a growing number of global financial regulators.
Raising the bar

**Monitoring tools**

Eleven years on from the financial crisis, financial regulators continue to stress the importance for financial institutions to maintain adequate systems and processes to support the active management of their intraday liquidity. Arguably, regulators are sharpening their focus on these systems and processes.

In its guide to the internal liquidity adequacy assessment process, issued in November 2018, the European Central Bank reiterates the requirements laid out in article 86(1) of the European Banking Authority’s Capital Requirements Directive IV, which states:

“Competent authorities shall ensure that institutions have robust strategies, policies, processes and systems for the identification, measurement, management and monitoring of liquidity risk over an appropriate set of time horizons, including intraday, so as to ensure that institutions maintain adequate levels of liquidity buffers.” 3

From a regulatory standpoint, the focus has shifted from monitoring and reporting financial institutions’ liquidity usage, to the need for them to clearly demonstrate actual management of their liquidity at regular intervals (hourly or more frequently) — rather than just at the start or end of the day.

Metrics that need to be monitored as highlighted by the BCBS in its 2013 paper, include:

(i) Daily maximum intraday liquidity usage
(ii) Available intraday liquidity at the start of the business day
(iii) Total payments
(iv) Time-specific obligations

Tools applicable to reporting banks that provide correspondent banking services include:

(i) Value of payments made on behalf of correspondent banking customers
(ii) Intraday credit lines extended to customers

And for reporting banks which are direct participants:

(i) Intraday throughput

If financial regulators are to have an “increased level of confidence in an institution’s ability to continue operating by maintaining adequate liquidity buffers and stable funding and by managing its risks effectively,” 4 institutions need to demonstrate how their intraday liquidity position unfolds throughout the day and when ‘peak’ daily funding requirements are likely to occur.

For many organisations, this level of visibility and control introduces challenges as they seek to consolidate information from different systems in real time, to form a global view of their liquidity across multiple accounts and currencies.

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Stress scenarios
In addition to actively managing and monitoring their liquidity, financial institutions must also test their intraday liquidity positions against various stress scenarios.

The BCBS outlined four categories of stress scenarios which firms need to test for:

(i) Own financial stress – which could result in a bank having to fund more payments from their own sources. For indirect market participants, stresses could result in correspondent banking lines of credit being withdrawn. Banks will need to consider what impact this has on their daily maximum intraday liquidity usage, available intraday liquidity at the start of the day, total payments and time-specific obligations.

(ii) Counterparty stress – A major counterparty suffers an intraday stress event, which prevents it from making payments. That means other banks may not be able to rely on incoming payments from this counterparty.

(iii) A customer bank’s stress – The customer of a correspondent bank suffers a stress event. Correspondent banks will need to consider the impact on the value of payments made on behalf of its customers and intraday credit lines it has extended.

(iv) Market-wide credit or liquidity stress, which could cause a widespread fall in the market value or credit rating of a bank’s unencumbered assets and could constrain its ability to raise intraday liquidity from a central bank or correspondent banks. Under this scenario, the Basel Committee says banks and supervisors should consider the closure of currency swap markets for those that manage liquidity on a cross-currency basis. All reporting banks need to consider the likely impact the stress will have on available intraday liquidity at the start of the day.

Banks are expected to determine, with their supervisor, which of these scenarios and their variants are relevant to their particular circumstances and business model. They should also discuss how they would address any adverse impact through contingency planning arrangements and/or their wider intraday liquidity risk management framework.

In its November 2018 ILAAP guidance, the ECB suggests banks should conduct these stress tests frequently (yearly or quarterly). Principle 7 emphasises the need to regularly maintain and modify a stress-testing programme as threats and vulnerabilities change. The intraday time horizon is clearly seen as a critical component of the overall liquidity stress-testing and liquidity planning programme – it is not just a matter of meeting BCBS 248 reporting requirements.
Business value and drivers for active intraday liquidity management

While meeting regulatory obligations is undoubtedly front and centre in most financial institutions’ minds, the ability to manage liquidity intraday and to stress test liquidity demands are not simply a matter of regulatory interest: There are considerable business optimisation opportunities that can come from having a strengthened intraday liquidity framework.

(i) The hidden costs of liquidity
The costs of liquidity, or the inefficient use of it, can be significant. In its 2018 report, The Case for Active Intraday Liquidity Management, Oliver Wyman estimates that for large banks, intraday liquidity contributes “hundreds of millions of dollars in annual funding costs.”

Financial institutions often borrow, pledge collateral or maintain credit lines from their correspondents to cover their payment and settlement obligations, all of which have a cost associated with them. They also need to maintain liquidity buffers and may have to rely on uncollateralised overdrafts, which incur a fee. There are also opportunity costs that come from tying up collateral unnecessarily.

Another topic getting increased attention in the market is whether nostro agents and settlement providers will explicitly charge for intraday liquidity. There are a number of factors driving this debate. Firstly, since financial institutions are now required to reserve expensive capital against intraday liquidity, it is reasonable to assume that, at some point, institutions may seek to recover the cost of these reserves through, for example, charging for intraday credit lines.

Intraday liquidity costs for a large bank - illustrative

ILLUSTRATIVE TOTAL GROUP-WIDE LIQUIDITY RESERVES ~$100 BN

10–30% OF TOTAL LIQUIDITY RESERVES IS DRIVEN BY INTRADAY LIQUIDITY

~100 BPS COST OF CARRY FOR LIQUIDITY RESERVES

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= $100–300 MM COST OF INTRADAY LIQUIDITY ANNUALLY

25% REDUCTION OF INTRADAY LIQUIDITY REQUIREMENT

$25–75 MM IN COST SAVINGS ANNUALLY

1. 25% reduction is an illustrative benefit; Oliver Wyman has identified upwards of 50% reduction opportunities at some institutions

Source: Oliver Wyman analysis

Rising interest rates are also likely to impact the cost of liquidity in future. While low or negative interest rates have persisted since the onset of the 2007–2008 financial crisis, rates are gradually on the rise again. At the time of writing, the Fed funds rate stood at 2.5%; in Europe, while the ECB has pushed back rate hikes until at least 2020, the Bank of England has started steadily raising rates by half a percentage point from their all-time low of 0.25%. Financial services firms cannot assume a low interest-rate environment will persist indefinitely, and, as liquidity becomes scarcer, its cost will only increase making active intraday liquidity management all the more essential.

A lot of the ‘hidden’ costs associated with the inefficient management of liquidity could be reduced significantly if financial institutions take advantage of active, real-time management tools that enable them to make better use of excess liquidity that already exists within their business. Our research suggests that financial institutions that actively manage their intraday liquidity could reduce their liquidity buffers by as much as 90%, which impacts the bottom line.7

Accenture estimates that a 30% reduction in collateral costs through optimised intraday liquidity management could net financial institutions a saving of at least €4 million a year.8 These savings are likely to be even more substantial in a high interest-rate environment. At the same time, active intraday liquidity management allows financial institutions to demonstrate control of liquidity and settlement risks, thus supporting the case against maintaining unnecessarily high and expensive liquidity buffers.

Countries that have or are implementing real-time payment systems

(ii) T+3: The move from days to minutes
Since the BCBS published its 2008 and 2013 papers on managing and monitoring intraday liquidity, a growing number of countries have implemented real-time/instant payment systems. In addition to the Real-Time Gross Settlement mechanisms that already exist today, Faster Payments in the UK; Australia’s New Payments Platform; Singapore’s FAST; and India’s Immediate Payment Service (IMPS); are some of the more than 40 real-time payment systems that are already live or being implemented globally. 9

These new real-time/instant payment systems provide convenience for businesses and consumers wanting to make and receive payments more quickly than the standard three days under traditional overnight batch payment processes. However, significantly reduced settlement times — settlement in minutes, rather than days — is a step change for financial institutions that are used to operating in a batch-centric world where liquidity is more a start- or end-of-day consideration.

Real-time/instant payments means continuous settlement cycles in a day. Financial institutions will need to post in “near real-time” to accounts to ensure funds are available for customers to make a payment.10 They will also need to enhance their liquidity management and forecasting to better understand and manage demands on their liquidity at different times during the day and predict when demand for liquidity may be at its highest. Failure to do so is likely to result in increased costs associated with the unnecessary use of collateral or unarranged overdrafts and the need to maintain high liquidity buffers.

The emergence of real-time payments is also likely to result in corporate customers demanding better visibility and control of their intraday liquidity balances. Banks need to be able to meet these demands, as well as managing their own liquidity accordingly.

(iii) New risks affecting financial markets
In addition to the more traditional risks that banks face, which could impact their ability to easily access liquidity, new risks have appeared that exacerbate established counterparty and operational risks. Financial networks – and banks in particular – are increasingly threatened by cyber-attacks, which have the potential to disrupt the normal functioning of payments and securities settlement systems.

Recent attacks on banking systems and networks in Asia, Central and Eastern Europe and Latin America have been attributed to sophisticated state-sponsored actors, who are no longer just targeting customer account information or card details, but are also attacking financial institutions’ core networks.11 Those organisations that have implemented real-time analysis and active management of their liquidity will be better placed to detect and mitigate the impact of such events on themselves and the wider network.

Real-time alerts highlight any breaches of threshold limits.

(iv) New technologies can help financial institutions more efficiently manage their liquidity
Technology is now at a tipping point where financial institutions can scale and innovate without significant redesign of their legacy IT systems and processes. The availability of cloud-based infrastructures and solutions makes it easier for firms to manage increasingly complex regulatory demands and to transition from a batch world to one where payments and liquidity move in real-time.

Thanks to advances in data analytics, artificial intelligence and machine learning, financial institutions can now apply sophisticated risk algorithms to large data sets to help them more ‘intelligently’ manage their liquidity.

We discuss these technological advances and their impact on intraday liquidity management in more detail on page 12.

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10 EY, “Real-time payments strategy” (2018), 12.
The status quo: Where are banks currently?

Before we explore how technology can help financial institutions optimise their intraday liquidity management and transform it from a cost-based discussion into a revenue-generating opportunity, let’s look at what processes and systems firms already have in place to help them monitor and manage their liquidity.

Regional and local financial institutions typically have fewer resources to invest in automating processes for real-time liquidity management. While global banks have invested in automated cash and liquidity management solutions, for other institutions, liquidity management is still a highly “manual, end of day activity.” 12

Our research suggests that regional and local institutions still rely on manual processes — spreadsheets, emails and phone calls — to collate and share the information institutions need to manage and monitor their liquidity. Where these firms have implemented automated solutions, they provide a high level overview and do not deliver a fully integrated cash management platform, capable of providing the real-time features demanded by the current environment.

Even fewer institutions have automated processes in place for stress testing their intraday liquidity in the manner regulators are increasingly expecting. The task of running stress tests is often described as “complex and manual”, with poor quality information and a lack of integration (of both systems and operational silos) adding to the complexity of the process. The time involved to incorporate even minor changes to stress scenarios hampers many banks’ ability to advance their intraday liquidity management processes in the ways envisaged by many regulatory authorities.

Financial institutions are struggling to find a fully automated and affordable liquidity management solution that meets all of their requirements. However, without such solutions, they cannot track and monitor their liquidity in real-time and have little chance of reducing the hidden costs associated with poor and ineffective liquidity management.

12 ibid, 37.
Where banks need to get to: The dawn of T+3 minutes monitoring

While the emphasis in the last five to six years has been on the monitoring and reporting tools required to meet regulatory reporting obligations, financial regulators are now looking at a wider range of criteria, including IT systems, processes and technology, to determine whether a firm can actively manage their liquidity.

So, what is the benchmark or optimal operating environment institutions should be striving for? With most regulators operating on a principles-based approach, there is little in the way of prescriptive guidance for firms to follow. However, we’ve highlighted below some of the key features and benefits of an active liquidity management toolset that a firm can expect to deploy:

(i) Headline benefits include improved risk management and more timely decision-making around liquidity. "

(ii) More proactive control and use of funds: Proactive management of intraday liquidity across business lines means firms can respond more effectively in real-time to potential stress scenarios and make the best use of available funds.

(iii) Continuous monitoring and active management of intraday liquidity: Reducing the need for firms to maintain high liquidity buffers, unarranged overdrafts or unnecessarily high levels of collateral.

(iv) Enhanced management, prioritisation and scheduling of payment queues: Better visibility and management of intraday liquidity means firms can prioritise or delay payments, depending on their urgency, in order to maximise liquidity availability.

(v) Profiling of customer behaviour: Delivering a better understanding of how liquidity is used by customers across different business lines, transactions and products at different times of the day delivers multiple benefits. It would help firms identify opportunities to influence customer behaviour, and to better understand and control the true intraday cost of business activity.

(vi) Better predictability of intraday liquidity needs: Financial institutions that actively manage their liquidity can move to an on-demand, real-time credit capability.

(vii) From monitoring and management to charge back and potential source of revenue: Active intraday liquidity management tools could help financial institutions unlock new revenue streams by charging back the cost of intraday credit lines to specific businesses and customers. If they actively manage their liquidity, they will be better placed to put a price on intraday credit, which could influence or ‘incentivise’ favourable liquidity management behaviours and help institutions gain a comprehensive picture of the impact on profitability.

Beyond the more obvious benefits of reduced risk and regulatory compliance, there are many additional hidden opportunities for those institutions that actively manage their intraday liquidity. Empowered by the more detailed intraday liquidity information that active management provides, financial institutions can manage payment schedules to reduce pressure on available liquidity and minimise the chances of financial institutions ‘over-collateralising’ their positions due to poor visibility or understanding of how their liquidity is being used.

Central to the delivery of all of these benefits is the ability to monitor and analyse changes in liquidity as it happens throughout the day.

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15 ibid
How technology can help

The need for financial institutions to actively manage their intraday liquidity is no longer a ‘nice to have’, but a ‘must have.’ Getting to this endpoint, however, is challenging. How can institutions capture the information they need to manage their liquidity in real-time and fulfil their increased regulatory reporting obligations?

Treasury, cash management and core banking systems, as well as external feeds such as bank account statements and payment advices, may provide the information institutions need to manage their liquidity more efficiently, but these systems are not well integrated.

A financial institution may have visibility of their liquidity profile from 9am to 12pm, but what happens later in the day when they go to square their book? In order to achieve a truly enterprise-wide real-time view of their liquidity, financial institutions need to consolidate siloed legacy systems into a single automated enterprise-wide solution. “Ideally, such a cash and liquidity monitoring and management platform should provide a unified, global view across all currencies and accounts.” 16

(i) Artificial intelligence and machine learning

Financial institutions may not have a crystal ball when it comes to predicting future demands on their liquidity. However, artificial intelligence and machine learning present the industry with an opportunity to create innovative solutions to both existing and emerging business challenges.

Opportunities such as ‘profiling’ may allow banks to digest large volumes of data to help them understand the likely behaviour of liquidity, allowing cash managers to pre-empt costly liquidity events and take active management decisions, as well as detecting abnormal liquidity behaviour that may indicate a liquidity stress event.

SmartStream’s Innovation Lab has tested machine learning algorithms’ ability to predict how liquidity changes throughout the day across countries and entities. These algorithms give institutions an indication of what their liquidity will look like at different times throughout the day, information that a cash or liquidity manager can then use to make better-informed and confident funding and investment decisions. In conjunction with Payment Flow Control, this creates a powerful tool for actively managing intraday liquidity.

Artificial intelligence could also be used by regulators to automatically detect anomalies or institutions that are more likely to suffer liquidity shortfalls in the vast quantities of reporting data they are required to gather.

(ii) Cloud computing

Previously, integrating disparate and siloed systems in order to obtain a real-time consolidated view of liquidity would have required a significant upfront IT investment from financial institutions and long lead-in times before they saw any return on their investment. Thankfully, this has changed as a result of digital technologies, which are now at an inflection point where financial institutions can solve a number of long-standing data and automation challenges more quickly and easily. The cloud allows businesses to scale as requirements change. In addition, it’s easier to deploy new data methodologies and analytics, such as artificial intelligence.

Instead of maintaining multiple data centres or investing in on-premise systems, cloud providers like AWS say institutions can benefit from the massive economies of scale, increased innovation and agility associated with accessing solutions in the private or public cloud.17

The upfront investment required and total cost of ownership involved to take advantage of cash and liquidity management solutions will reduce as solutions are made available on a ‘pay as you go’ subscription-based model, enabling financial institutions to achieve their liquidity management goals.

As we have seen, the changing business and regulatory environment is placing increasingly complex demands on traditional cash and liquidity management processes – changes which many legacy solutions and approaches may struggle to keep pace with. Fortunately, the changing technology landscape is creating opportunities to match these challenges.

17 Amazon Web Services, “Innovating in the Cloud for Banking” (2019).
Conclusion

There has never been a greater incentive for financial institutions to actively manage their intraday liquidity. Not only do regulators demand it — the BCBS’s monitoring tools are now widely adopted and supported by regulators globally, but market forces (rising interest rates, faster settlement times, scarcity of capital, increased risks, costs and complexity) are making active intraday liquidity management a must-have for all financial institutions.

But at what cost you may ask? The benefits of actively managing your liquidity in real-time can transform what was previously a cost-based discussion into a revenue-generating opportunity. Financial institutions can reduce the direct and indirect costs that poor and ineffective intraday liquidity management has on their business. They can enjoy better visibility over how their clients utilise intraday credit lines and adjust their payment schedules to make better use of available liquidity. Additional benefits include significantly reduced last-minute borrowing, unarranged overdrafts or maintenance of unnecessarily high levels of collateral and liquidity buffers.

Whatever the level of sophistication of financial institutions’ intraday liquidity management solutions, at their core, each of these solutions will have sought to address the following business challenges:

(i) Creating a ‘single source of the truth’; consolidating transactional and reference data from across the organisation to create an enterprise-wide view of account forecast and actual balances.

(ii) Performing intraday reconciliation of settlement and projected activity to deliver a real-time view of liquidity balances and activity.

(iii) Monitoring and understanding liquidity trends to generate meaningful metrics and trends of intraday liquidity usage.

Once organisations have addressed these challenges, they are well placed to take advantage of opportunities such as AI and machine learning and derive significant business value through enhanced active management.

Financial institutions are at different stages on their journey to achieving a real-time, global consolidated view of their liquidity across countries and currencies. We recognise that for many firms, it is still a manual end-of-day, and at best start of day process. However, the good news is that the next generation of technologies — cloud computing, artificial intelligence and machine learning — mean that legacy IT systems and processes no longer need to be an impediment to firms’ global real-time ambitions. Now more than ever, technology is enabling financial institutions to seamlessly transition to a world where visibility of their cash and liquidity is a constant that truly adds value and profitability to their business.
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