Strategic Intraday Liquidity Monitoring Solution for Banks: Looking Beyond Regulatory Compliance

Incorporating advanced real-time data and analytical capabilities in the solution for intraday liquidity monitoring will enable banks to gain competitive advantage in a very cost-efficient manner.

Executive Summary
The financial crisis of 2008 had resulted in a severe liquidity crunch along with the credit crunch that continued for a significant period despite the stimuli from governments and regulatory bodies worldwide. A steep jump in liquidity costs in the interbank market and severe damage to the reputation of several banks significantly affected the credit markets and the overall economy. The crisis exposed gaps in risk management that included a lack of intraday liquidity monitoring, minimal effective collateral management and banks’ inability to react to liquidity stress.

While detailed ratio requirements have been defined for liquidity risk management over the short-to-medium-term, regulations on intraday liquidity currently focus on establishing effective risk management and monitoring. These regulations are expected to expand to more stringent regulations, as regulators and payment system supervisors analyze the trends from this monitoring exercise. Also, banks will have to focus on optimizing payment flows, funds availability, collateral and credit line usage to deal with the increased cost pressures in payment operations and decreasing profit margins in clearing businesses. Building a strategic intraday liquidity solution with real-time monitoring and analytical capabilities is strongly recommended to deal with these expected changes.

This white paper discusses existing intraday liquidity regulations, the need for a strategic solution and the components required for a robust solution based on the changing business environment in payment and liquidity operations.

Defining Intraday Liquidity
Banks require intraday liquidity to meet the intraday exposure arising from the daily payment and settlement activities carried out through multiple channels. Such intraday exposure occurs mainly due to a timing mismatch between incoming and outgoing payments, and settlements of sales/purchases of securities. Intraday liquidity is the funds, collateral and/or credit supplied or consumed by the bank as a direct participant in payment, clearing and settlement systems and/or through correspondent banks/custodians, as part of business-as-usual activities. As the bank uses multiple payment channels that are independent of each other and can have different sets of operation instructions, liquidity may not be fungible across all the channels.
**The Need for Monitoring**

A bank can face intraday liquidity risk exposure if total payment outflows exceed the intraday balance (which includes total inflows within the day, available funds, collateral and credit lines). The possibility of high intraday exposures and/or failure to generate intraday liquidity to meet these exposures gives rise to intraday liquidity risk for banks. Such scenarios can be routine or might arise in times of stress. Such a crisis can rapidly spread across the highly interdependent interbank market. This is why regulators are focusing on monitoring trends in intraday liquidity for individual banks and for the overall economy.

Due to intraday liquidity risks, banks can face not only additional collateral costs/penalties but also possible irreversible damage to reputation (see Figure 1). Such damage will not always be limited to the intraday liquidity management but can set off a chain of events leading to other significant risks, as seen during the financial crisis of 2008.

**Regulatory Requirements**

The Bank of International Settlements (BIS) has issued guidelines for intraday liquidity monitoring by banks and national financial regulators. Though only global banks need to comply with these regulations, other banks might also be included in the regulatory scope subject to the national supervisor’s discretion. These regulations complement the broader liquidity risk management and supervision regulations to be implemented as part of the Basel compliance framework.

**Scope of Application**

To expand and diversify across the world, today’s banks have evolved a complex organizational structure with a large network of collaboration with payment systems and with multiple banks/agents/custodians across the world for correspondent services. This poses a challenge in identifying intraday liquidity risk sources and, hence, in finalizing the scope of application. In addition, each bank depends on other banks, central banks and payment systems for intraday funding operations. Past economic events have shown that the risk correlations among all these entities increase in times of stress.

Clearly, banks need to coordinate with these multiple entities to build an effective solution. As part of their policy framework, banks will need to define the scope of the monitoring solution based on the following components:

- Legal entities.
- Currency.
- Direct participation in payment systems.
- Correspondent banks.

**Potential Outcomes of Intraday Liquidity Shortfall**

![Diagram of potential outcomes](image)

- Cost of additional funds.
- Revocation of credit lines to limit liquidity availability.
- Reallocation of unencumbered collateral to intraday needs.
- Penalties for missing time-specific obligations.
- Damage to reputation.

*Figure 1*
Based on the contribution of each of the above components to the bank's intraday payment operations in each geography, senior management must define the scope of the solution in consultation with the regulatory bodies. Establishing an “intraday liquidity monitoring committee” to manage the bank’s risk framework can help elevate risk management across lines of businesses and departments.

Regulatory Solution
A robust risk management framework includes the following components to ensure regulatory compliance:

• Intraday liquidity monitoring tools:
  › Measure expected daily gross liquidity inflows and outflows.
  › Monitor intraday liquidity exposures against the available liquidity sources.
  › Forecast intraday liquidity flows and shortfalls.
  › Manage and mobilize sufficient liquidity funding sources to meet the liquidity demands and avoid shortfalls.

• Stress testing:
  › Define intraday stress scenarios in at least three conditions – one’s own financial stress, counterparty or customer bank’s stress and market-wide credit/liquidity stress.
  › Estimate the impact on intraday liquidity usage, maximum shortfalls, time-specific obligations and availability of liquidity at start of day.

• Report to regulatory bodies:
  › Report the monitoring results periodically to the regulatory body at least once a month.
  › Demonstrate capability to manage the intraday stresses either through associated risk policy and procedure framework or through contingency planning procedures.

However, as regulators start collecting the data and analyzing the trends, additional regulations are likely to emerge, requiring banks to apply new risk prevention measures. Therefore, it is essential that the intraday liquidity management solution be agile and capable of handling the anticipated changes so as to minimize the compliance costs over the long run. This approach has the potential to deliver better return on investment through efficient payment scheduling, collateral management and the delivery of value-added services – as discussed in the next section.

Business Needs To Drive Strategic Solution

An Evolving Business Environment
As liquidity risks and constraints gained importance after the financial crisis, regulators as well as payment and settlement service providers (systems and agents/correspondent banks) needed to strengthen safeguards in the payment systems to control risk. This has led to business implications for banks and the need for optimization of intraday liquidity management.

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Basel regulations have defined stricter qualifications for unencumbered assets that can be posted as collateral to deal with issues such as double duty. Increase in collateral haircuts is driving additional demand for collateral by payment systems service providers and central banks. Also, banks have traditionally relied on uncommitted (sometimes unlimited) intraday credit lines from correspondent banks. These credit lines may either become limited or begin to attract higher fees as correspondent banks also face higher liquidity costs.

Overall, intraday liquidity costs are set to increase either as opportunity costs for collateral or as explicit credit fees. In such scenarios, banks can leverage available intraday liquidity data to derive the pricing of their correspondent banking services usage as well as offerings. The data can provide significant business insights into the costs of liquidity, and banks may consider passing on these costs to their clients. Whether banks can pass on these extra costs to customers remains a business decision, considering that the business relationship portfolio for each customer usually extends way beyond payment and settlement services.

As a result, banks must examine ways to minimize intraday liquidity costs. They can focus on timing the release of payments so as to ensure optimized distribution of liquidity across different channels.
Once the bank has a holistic view of payment flows and collateral availability across multiple channels, it can optimize its deployment to save on large chunks of unutilized collateral. Banks therefore require a comprehensive choice of execution to control cost and risk. This approach will be driven largely by the intraday credit policy of central banks as well as optimization between costs of intraday liquidity versus overnight liquidity.

While looking to optimize intraday liquidity, banks can explore methods of offering value-added services to their customers. They can identify and coordinate intraday payment behavior patterns to schedule payment flows in a mutually beneficial way. They can also offer intraday time-stamped reporting for the nostro accounts of customer banks. All this is possible if the bank is able to monitor its own payment patterns as well as that of its customers’ intraday payment flows.

Applying Analytics

Considering the anticipatory regulations and business needs discussed till now, it is strongly recommended that following a critical fourth component should be considered by banks as an addition to the solution highlighted above.

- An enhanced capability to analyze, optimize and plan future intraday liquidity management needs should include the following:
  - A holistic view of liquidity management across the bank.
  - The ability to estimate intraday liquidity costs and incorporate these in pricing of credit lines.
  - Functionality to drill down into liquidity usage patterns to various levels, including the single customer level.
  - The ability to monitor and forecast liquidity buffers across channels.

Meeting these objectives will require analytical techniques such as trends analysis and forecasting techniques coupled with behavioral modeling, what-if analysis and game theory approach.

The complexity of the bank’s transactional network, its size and existing liquidity management systems all play a role in the choice of an enterprise-wide solution. A cost-benefit analysis will be a driving factor for the buy-versus-build decision.

Leveraging Analytics in Intraday Liquidity Management
Figure 3 illustrates a sample solution framework using “best of breed” components.

**Implementation Challenges**

The solution poses daunting data management challenges given the millions of payment transactions that many banks execute through a multitude of platforms in multiple currencies for various counterparties. In addition to large volumes of payments, standardizing the data will need considerable analysis as frequency and data availability across all these channels may differ significantly (see Figure 4). This makes the solution not only difficult but also an expensive affair.

Also, tracking unencumbered liquidity and its valuation will need an effective collateral management solution.
we recommend that a bank develop its intraday liquidity transaction monitoring platforms in conjunction with the collateral management platform within the bank as part of other regulatory requirements. for more details, read gearing up for Basel III and Collateral Management in Focus.

looking ahead
An intraday liquidity management platform will not only serve as a regulatory compliance solution but will also be a cost control opportunity or even a revenue-generating source for banks. An analytically advanced technology platform capable of handling real-time information flow with an integrated view across multiple payment systems and accounts will be the key enabler. It is imperative that this solution be integrated with an advanced collateral management platform to derive all the solution’s benefits. This will ensure that the available intraday collateral is optimized across multiple payment systems, so that risks can be managed in the most cost-effective manner. A strong collaboration between technology and analytics and business understanding is essential to ensure the success of such an initiative.

references
• Monitoring tools for intraday liquidity management, April 2013, by the Banking Committee on Banking Supervision.
• International regulatory framework for banks (Basel III) by the Banking Committee on Banking Supervision, 2013.

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