



## A New Model for Global Cash Management

Transaction banking generates lucrative and stable annuity revenues that are highly profitably at scale. For this reason numerous new non-bank entrants ranging from payment institutions (PI), payment service providers (PSP) and third-party processors (TPP) are entering the payments business. However to remain competitive, combat commoditization and avoid disintermediation financial institutions must devote massive investments in technology and human resourcing to stay relevant to increasingly sophisticated corporate clients.

Two of the greatest challenge that banks face to profitably deliver global payments and cash management services are supporting legacy core banking infrastructures and a resource-intensive delivery model. Whereas legacy systems inhibit innovation, the current service model does not scale easily. Both thrust upon banks unsustainable cost structures that bloat run-the-bank budgets, a reality that applies equally to global, regional and domestic institutions.

Virtual account management (VAM) technology simultaneously solves both challenges. VAM is a single integrated platform which incorporates accounting, payment, cash management and channel functionality. It front-ends to the market existing core banking architecture to deliver completely new capabilities without changing underlying systems. VAM supports global cash and liquidity management products in a manner that slashes the cost to service clients by leveraging the self-service model of the Internet.

The range of corporate treasury solutions that VAM supports include:

- Payables Management, Payment Factory and Payments-on-behalf-of (POBO)
- Receivables Management, Collection Factory and Collections-on-behalf-of (COBO)
- Virtual Cash Pooling
- Real-time Global Liquidity Management
- Segregated Funds and Client Money Management

This paper examines how VAM transforms transaction banking by fundamentally revamping the operating and service model by which the banking industry supports the global cash management requirements of corporate enterprises in the future.

What constitutes a VAM system and the parallels between VAM and the corporate in-house bank (IHB) are examined in detail. Most importantly for financial institutions, the compelling market differentiation achieved by a bank offering VAM over that of a corporate implementing an IHB is outlined.

**Today’s Cash Management Business Environment**

The business environment for globally active enterprises can be highly complex from a cash management standpoint. Treasury strives to achieve optimal working capital utilization to ensure that the financial supply chain efficiently and effectively supports the physical one. It does this by monitoring global cash positions and managing credit facilities across all bank accounts of group companies to move cash to where and when it is needed.

However, in the era of just-in-time global supply chain operations, increasingly real-time insight into global cash positions and the ability to move monies intraday is needed to support this changing business environment. Unfortunately today’s model of international correspondent banking does not easily facilitate the ability to manage cash in a real-time environment.

Two central challenges face corporate treasurers today:

1. Obtaining timely consolidated information of group-wide multi-currency positions across a disparate banking network in order to optimize the financing mix and duration of funding against expected and actual enterprise cash flows;
2. Optimizing the automation of order-to-cash and purchase-to-pay cycles with 100% rates of straight-through-reconciliation (STR) of cash to accounting.

Before examining how a virtual account management solutions can meet these twin challenges an understanding of the inherently fractured nature of corporate cash is first needed.

**Fractured Nature of Corporate Cash**

Corporate cash deposits are typically dispersed across dozens, hundreds or even thousands of group and subsidiary bank accounts. Continuous movements of customer receipts, supplier, payroll or other operational payments and cash consolidation transfers transit through treasury and operating accounts. Because many corporates variously rely upon global, regional and domestic banks for strategic, operational and tax/legal reasons, bank accounts are scattered across often unrelated financial institutions. As corporate acquisitions occur, the numbers of accounts and banks servicing the operations of newly acquired subsidiaries invariably grows.

The following table depicts a typical account architecture for an internationally active corporation that includes multi-currency treasury accounts at group level as well as domestic currency operating accounts at the subsidiary level:

<b>Group Level</b>	<b>Purpose</b>	<b>Currency</b>
Treasury Trading A/C	Holds surplus cash, investment and income account from treasury trading activity	Base currency
Treasury Cash Concentration A/C	Account for repatriating surplus foreign currencies to support liquidity optimization and investment	Multi-Currency
<b>Subsidiary Level</b>	<b>Purpose</b>	<b>Currency</b>
Finance A/C Group Level	Account for domestic subsidiary finance operations, holds local currency surplus funds, sweeps to Treasury Cash Concentration account	Local currency

Receipt A/C	Accounts receivables operating account	Local currency
Payment A/C	Accounts payables operating account	Local currency
Payroll A/C	HR operating account (e.g. payroll, employer pension contributions)	Local currency
Tax A/C	Operating account for local jurisdiction tax payments	Local currency
Sundries A/C	General expenses account associated with running the local business (e.g. facilities)	Local currency

This account architecture, which supports both operational and treasury functions, is often replicated for each subsidiary across the group thereby creating a complex multi-entity and multi-bank account structures. The extent to which a corporate’s disparate cash deposits and cash flows fragment depends on many factors, including the scope of its international currency activities, the deployed treasury model and the merger and acquisition profile of the organization among others.

The next section looks more closely how a disparate account landscape creates visibility and reconciliation challenges for corporations.

**Differing Cash Management Mandates**

Broadly speaking two distinct corporate functions are concerned with enterprise cash: Treasury and Operating Units. Typically these function independently of each other, and each have different mandates. Whereas treasury concerns itself with managing the working capital and liquidity of the enterprise as a whole, operating units are concerned with running the day-to-day business activities of an individual group company or subsidiary. In a cash management context the latter includes administrative (payroll), legal (tax), sales (receivables) and production (payables) elements.

To operate efficiently and effectively the requirements differ:

- Treasury requires accurate and timely information about expected and actual cash movements that are generated from operational unit processing activities (e.g. collections and payments). With this information it can effectively perform cash management, such as netting long and short cash positions to achieve optimal use of working capital and available credit facilities (i.e. overdrafts).
- Operating units require high levels of automation in processing payments and reconciling cash to accounting in order to efficiently support the core business as well as deliver cash forecasting information as required by treasury.

In recent years technology has evolved to support these cash management operations of these distinct parts of an organization.

**Treasury Response: Corporate In-House Bank**

Enterprise Resource Planning (ERP) and Treasury Management Systems (TMS) have transformed the way modern corporations operate. In a treasury context, the corporate In-house Bank (IHB) introduced by TMS and ERP vendors provides the means to manage treasury as a global process. A partial list of the functional areas of treasury that the IHB supports include global supply chain financing, risk and exposure management, shared services center management, working capital & cash management, global liquidity management and bank partner management.

In short, the IHB enables optimizing financial supply chain processes through automation and management information to better support global supply chain operations of the enterprise. Key treasury efficiencies realized are in the areas of funding (e.g. maximizing intercompany flows to fund global operations), payments (e.g. centralized payment factories), working capital and cash management (e.g. automating reconciliation of cash and accounting, improved forecasting) and global liquidity management (e.g. bank overlay structures for liquidity visibility).

Now banks, with a unique market position as trusted partners to clients, can leverage VAM technology to support the global treasury requirements of multi-banked corporate enterprises in ways beyond the IHB capabilities. In so doing, banks will to redefine the operating and service model for delivering global cash and liquidity management to the entire industry.

### **Banking Industry's Traditional Approach to Cash Management**

From a real-time liquidity management perspective the traditional model of global cash management is broken. Whilst global banks go to great lengths to offer comprehensive liquidity management solutions to ameliorate the impacts caused by the fractured nature of corporate cash, ultimately the model itself is not fit for purpose.

Traditional global cash management solutions rely on sophisticated pooling structures and sweeping techniques to physically consolidate cash in a layer of concentration accounts. At a basic level, such services are not available in all markets due to national currency controls. Where not prohibited by law, such physical movement of cash, which are typically performed end-of-day, can be costly when foreign exchange is involved. Finally, the latency inherent with cash concentration offers little by way of intraday reporting across a broad multi-bank landscape.

Notional pooling is used by some banks to compliment physical cash pooling and overcome capital control or other challenges without making actual cash movements. Yet notional pooling is itself prohibited in many jurisdictions. And notwithstanding legal restrictions, the commercial viability of notional pooling (already a low-margin bank product) is increasingly in doubt due to capital set-aside changes being introduced by BASEL III regulation.

Corporates seeking comprehensive solutions from their banks face a final challenge due to the recent downsizing trend in the banking industry. Driven by new global capital adequacy requirements and risk-profile regulations many sprawling Tier-1 banks (so-called SIFIs) have been reducing their global market footprint. When institutions divest businesses and exit markets decreases in capabilities in those markets is commonly seen. With little to suggest an end to this trend in the near term, corporations can expect to continue seeing spotty coverage of cash and liquidity management products and services both across the industry as a whole as well as within banking groups themselves.

Now some large and multi-national corporations (MNC) have turned to self-help to solve the challenge themselves. Those corporations who can afford the steep costs of Enterprise Resource Planning (ERP) and Treasury Management Systems (TMS) build their own an In-house Bank (IHB), which offers much-improved multi-bank cash and liquidity management over what most banks can offer. Yet intraday liquidity management may remain incomplete since structurally the corporate account structures remains unchanged. And for SMEs, who have considerably less investment capital and treasury resources than the large corporate or MNC, obtaining an affordable and comprehensive real-time cash management service across their multi-bank environment remains largely out of reach.

In summary, coverage of traditional cash management products and services across global markets is highly variable, can be complicated and expensive to set-up and support (or build) where it is available, and largely fails to offer consolidated intraday cash position reporting to assign treasurers

minimize use of overdraft facilities. Under the best of conditions the traditional model of global cash management is flawed and the market would benefit from a better fitting solution.

**New Global Cash Management Operating Model**

Virtual Account Management supports an entirely new operating model for global cash management. Under this model VAM rationalizes a corporate’s traditional multi-bank account hierarchy to a fraction of the total using shadow account technology with header account and virtual account sub-ledgering. This reordered account architecture, essentially inverting the existing distributed account hierarchy, is then underpinned by VAM’s full service cash and liquidity management capabilities delivered via browser-based web channel.

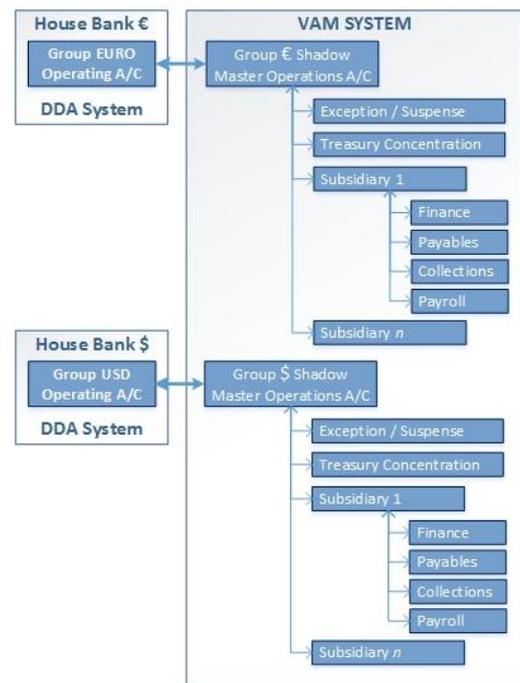
**How VAM Works**

Under the VAM architecture the structural relationship between group and subsidiary accounts changes as do the bank systems that support them. Today banks maintain accounts for customers in a demand deposit accounting (DDA) system (the bank’s system of record). Separate transaction accounts are opened for each legal entity, often one for each entity’s operating area such as AR, AP or HR for example. Considerable resource costs are incurred by both bank and corporates alike to open (including KYC due diligence), maintain (including signatory management), and reconcile (including investigations management) separate transaction accounts.

In contrast under the VAM model a bank opens a small number of transaction accounts for a legal entity in the DDA system. These DDA ledger accounts are mirrored 1:1 in the VAM system with header accounts, which virtual accounts then sub-ledger. Both header accounts (think omnibus accounts) and virtual accounts exist only with the VAM system.

Using shadow accounting techniques, VAM maintains synchronization of transaction allocation and balance control between header and virtual accounts, as well as between the header accounts and mirrored DDA ledger accounts. Debits and credits posted to DDA ledger accounts are reflected both on the mirrored header account as well as against the relevant virtual account within the hierarchy.

Critically, whilst payment initiation is triggered at the virtual account level, physical cash movements are recorded and conducted through DDA ledger accounts in the bank’s system of record. The single exception is when transfers are made between virtual accounts, which will be book transfers if they cross DDA accounts or simply changes in individual virtual account balances if they movements are between accounts are within the same hierarchy. In this later case the DDA is completely unaffected. This is an important VAM benefit because transactional processing costs can be reduced when cash movements need not pass through traditional payment channels of Swift or the clearing systems.



Accounting posting between DDA ledger, header and virtual accounts is facilitated by an account mapping / routing table that cross-references every virtual account with the associated DDA ledger account. Any balance in a virtual account within an account hierarchy (i.e. structure) represents a notional (actually virtual) proportional balance of the header account as a whole. The total positions

of all virtual accounts in any hierarchy sum to the balance of the header account under which it resides.

### **Why Bother?**

Why would a bank further complicate its technology landscape with an additional layer of infrastructure only to add virtual accounts, a reasonable banker or corporate treasurer might ask? Especially when existing DDA systems already support reference accounts (used for notional pooling)?

The reason is because VAM fundamentally changes global cash management. Rationalizing account structures and enabling corporate customers to conduct transactional operations against virtual account enables entirely new operating and service model for global cash and liquidity management.

### **Corporate Benefits Abound**

Under the VAM model all of the transactional operating requirements that entities have today continue to be fully supported. Activities like bank account management, internet banking user administration, payment initiation, receipt management, statement reconciliation and investigations are conducted directly in the VAM portal. The different is that subsidiary staff perform their functions against their respective *virtual account*. So instead of using sophisticated pooling techniques that physically move money end-of-day in order to adapt to a corporate's fractured account landscape, under the VAM model corporate cash remains naturally concentrated in a small set of corporate current accounts but without sacrificing transactional operating functions of the subsidiaries.

The rationalization of bank accounts - without compromising transactional operating requirements of subsidiaries - introduces many financial supply chain and liquidity management efficiencies that broadly benefit the entire enterprise:

- True real-time liquidity position monitoring is enabled since balances are now concentrated in fewer accounts (managed at group treasury level) without reliance on daily cash sweeps to/from concentration accounts sitting above the subsidiary level.
- Account rationalization delivers considerable reduction in costs associated with bank account administration;
- Reduction of financing costs to support operations through inter-company lending capabilities.
  - o First, overdraft facilities group-wide can be reduced because fewer accounts with larger balances advances and intraday position views enable improved limit management and WCM optimization, especially when formerly trapped cash and laying balances in local operating accounts is reclaimed.
  - o Second, treasurers can move monies themselves between subsidiaries and/or central and regional treasuries within the group as needed (ad hoc or via self-managed standing sweep order) enabling just-in-time (JIT) financing.
  - o Third, enhanced treasury internal pricing can be realized through inter-company loan charges, FX rate and margin management, interest apportionment and loan repayment flexibility.
- Reduction in bank transaction costs when cash movements around the enterprise do not pass through Swift or clearing systems because inter-company movements may be book transfers

between DDA accounts (from the bank's perspective) or virtual transfers when movements are conducted within the same hierarchy;

- Massive financial and physical supply chain efficiencies through realization of very high rates of straight-through-reconciliation (STR) for cash processing. Under the VAM model unique virtual account numbers function both for interbank routing as well as corporate reconciliation purposes. Because an account number is always present in financial messaging exchanged between financial institutions (unlike reference fields which can be truncated or stripped), the account number represents the ultimate reference data. Using the account number to match a cash receipt against a sales invoice, for example, delivers true STR of cash receipts. The benefits to a corporate of accelerating the cash conversion cycle by automating allocations of receipts represents one of the greatest areas of improvement that banks can offer in the optimization of WCM;
- Payment factory capabilities in VAM enable centralization of payables management. Consolidating supplier movements in dedicated virtual accounts enables streamlined supplier management, including mitigating supply chain risks through supplier concentration analysis;
- Centralization of corporate banking relationships (where practical) at group treasury level enables consistent bank policy control, a much desired objective.

### **Challenges Facing Financial Institutions**

Many transaction banks struggle to achieve profitability under unsustainable cost structures that threaten to overwhelm this historically profitable business. Today financial institutions face a similar challenge of remaining competitive and relevant to their corporate clients whilst profitability models are under severe strain. The list of challenges facing banks is long, including:

- Disparate legacy infrastructures that are costly to enhance;
- Large back office operations needed to support inefficient service models;
- New capital adequacy and liquidity requirements reduce available grow-the-bank funding;
- Regulatory compliance costs impact innovation away from commoditized products.

At the same time, many regional banks struggle to achieve competitive parity with the global banks against whom they increasingly compete in domestic markets. As corporate clients become more sophisticated consumers of financial services, their demands for global solutions, excellence in service levels and relationship-based pricing frequently exceed the capabilities of their home market house bank. As a result, such demands are increasingly being satisfied by global and specialized niche banks, as well as non-bank payment service providers, who offer broader and deeper portfolios, often at lower-prices.

Meeting the twin challenges of maintaining competitiveness and relevance with profitability requires a new service model that delivers market-differentiating value propositions that corporate clients demand while at the same time doing so under a sustainable cost basis. Virtual Account Management offers a solution.

### **VAM Increases Bank Profitability Whilst Reducing Servicing Costs**

Profitability is most sustainable when it is driven by growing revenue and increasing operating efficiency to reduce marginal costs. For a financial institution Montran's Virtual Account Management solution achieves both.

### **Reducing Bank Cost Base**

The paramount means by which VAM reduces a bank's cost base by extending the trend of browser-based self-service (think internet banking). The account rationalization achieved through the introduction of virtual accounts reduces considerable burdens associated with bank office account administration. This is accomplished without compromising due diligence and KYC requirements which are maintained at the level of DDA ledger accounts.

Using the VAM portal, corporate clients conduct the entire range of virtual account management functions themselves. These include opening and closing virtual accounts as well as user / authorization management. Beyond account activities, cash and liquidity management functions are also self-managed. These include all payment-related activities including investigations management, building intraday position monitoring dashboards, and inter-company lending management that moves cash as needed through payment initiation and standing-order capabilities.

Activities conducted by the client themselves introduces considerable efficiency opportunities, including ability to redeploy resources to perform more client analysis (i.e. credit, risk, profitability) and cross-selling.

### **Expanding Bank Portfolio**

VAM enables a financial institution to offer a full suite of global multi-currency cash and liquidity management products through the introduction of a single system without replacing existing back office infrastructure. Before VAM this range of capability was available to only to top tier of global transaction banks at great cost.

VAM overlays the bank's core banking architecture. As such it has a small infrastructural footprint. Using shadow accounting to achieve balance and transaction synchronization with the back office core banking systems through a small set of interfaces, VAM performs all the account and payment processing logic related to virtual accounts itself. However the bank's existing core infrastructure remains unaffected and continues to manage end-to-end payment processing between the DDA ledger accounts and payment engine, as well as connectivity to the international banking network (via correspondents) using domestic clearing & settlement systems.

VAM is an integrated solution that includes DDA (i.e. account, interest, statements), payment engine (i.e. payment type management, foreign exchange, format validation, warehousing), investigations and portal components. Customer's access VAM capabilities via portal screens that seamlessly integrate with the bank's e-channel environment by assuming the bank's look & feel and use single sign on (SSO) authentication technology (stand-alone two-factor authentication is also supported). VAM can truly be thought of as a so-called bank-in-a-box.

VAM supports a wide range of bank products in demand by corporates. It does so in a minimally invasive way to what is already a highly complex technical landscape for many banks. VAM allows a bank to dramatically expand its cash management portfolio under a supportable cost base by leveraging the self-service model of the Internet.

### **Conclusion**

In conclusion, this short article does not exhaustively cover the benefits of virtual account management. It is a win-win situation when banks offer their corporate clients solutions that maximize working capital management and minimize financial costs to operate the enterprise. Technology has evolved to make it possible for banks to offer their corporate clients an affordable solution that overcomes the challenges presented the traditional model of global cash management. Banks with vision are embracing virtual account technology to change the way the cash management is conducted in the industry and position themselves as a leading global cash management bank.