# A trip around the TMS, part 2

IN THE SECOND PART OF HIS SERIES ON TECHNOLOGY, **WILL SPINNEY** EXPLAINS HOW A TREASURY MANAGEMENT SYSTEM WORKS.

All deals which treasury transacts should be recorded and managed within the treasury management system (TMS). Using a basic daily workflow as an example (see Figure 1), the TMS typically performs the following tasks (although it should be remembered that companies have different workflows and may use more than one system across the different activities or may not have automated every task):

**WORKFLOW MANAGEMENT**

**1. Cash position**

The daily cash position on which the treasurer and cash manager base their decisions comprises:

- reconciled bank statements, including pooling, sweeping, zero balancing;
- deal requests by business units (eg. funding requests or FX requirements);
- known and forecast activities, such as:
  - maturing treasury transactions;
  - cashflows arising from deals transacted previously, such as interest receipts/payments, foreign exchange flows, etc;
  - expected business payments (such as salaries, tax, operating expenditure); and
  - expected business receipts.

The TMS imports the bank statement file from the Electronic Balance Reporting (EBR) system or via an exchange (both covered more fully below) and reconciles the bank statement with the information held within treasury. Note that this is a cash reconciliation exercise rather than an accounting one. Has the position turned out as expected or not? If not, why not and what needs to be done about it?

Where a treasury operates as an in-house bank, deal requests from business units are often input to the TMS directly using a web screen which provides business units with limited access to the system, such as recording deal requests and forecasts, approving transactions and accessing reports such as transaction statements, netting statements and current account statements.

Known and forecast activities will either be held in the TMS for transactions recorded within it (such as debt, investment and foreign exchange transactions) or business flows imported from other systems such as the accounting or enterprise resource planning (ERP) system.

The TMS brings this information together in a cash position, either just for that day or for a few days ahead, generally at a treasury's own preference. From the cash position, treasury derives the transactions to be dealt, obtains any approvals necessary prior to dealing, and deals in the market.

**2. Deal input**

The TMS records all transactions performed by treasury. Transactions can either be imported from an online dealing

portal or input directly into the system if the deal has been transacted by phone. The TMS will support some or all of the following, depending on the choice of system and how it has been implemented:

- recording competitive quotes on the deal for performance analysis purposes;
- checking the deal against counterparty and other limits which the treasury may use;
- automatically producing all the cashflows resulting from the deal (such as flows at the start or maturity of the transactions, or periodic flows such as interest) and any events (such as rate sets, option expiry dates) for the relevant dates;
- automatically passing the deal through the workflow set up for the transaction type/amount/dealer;
- automatically creating the general ledger entries needed to record the transaction in the books of account; and
- automatically logging hedge relationships required to satisfy the requirements for obtaining hedge accounting.

**3. Approval**
Different TMS allow approvals to be built into the transaction workflow after the deal has been transacted and/or once the settlement details have been checked. The workflow controls that can be set up in a TMS typically enable differences to be defined by dealer, currency, amount, transaction type, etc.

**4. Confirmation**
Confirmations are produced from the TMS as either letters or files in the format required by the confirmation matching system. Typically, the formats of confirmation letters can be configured according to the needs of each treasury.

**5. Settlement generation**
The TMS stores information about the company's own settlement instructions and those of its counterparties. Indeed, this standing data is a key part of the construction of the system. These are usually allocated automatically to each transaction based on the type of transaction and currency. The TMS permits cashflows to be netted and/or split, either manually or automatically, according to rules which have been defined.

**6. Payment initiation**
Once settlement instructions have been checked, the payment file can be produced in the format appropriate to the electronic funds transfer (EFT) system in use.

**7. System reporting**
One of the key functions of a TMS is to provide reporting on treasury activities and information imported from other sources. Reporting can be in almost any format – PDF, XLS, XLSX, etc. Typical reporting (excluding corporate finance and risk management reporting) options are shown in Table 1 (on page 10).

Of these reports some, such as cash management and transaction reports, will be produced daily or even intra-day. Others may be produced monthly, such as in-house bank statements and accounting reports, or on demand.

**Figure 1:** Transaction workflow

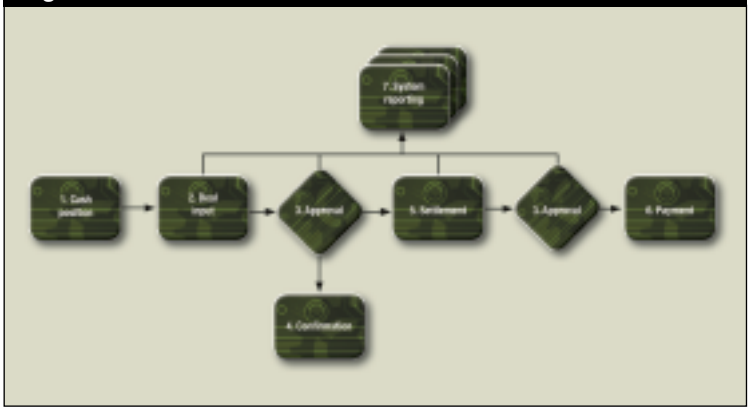
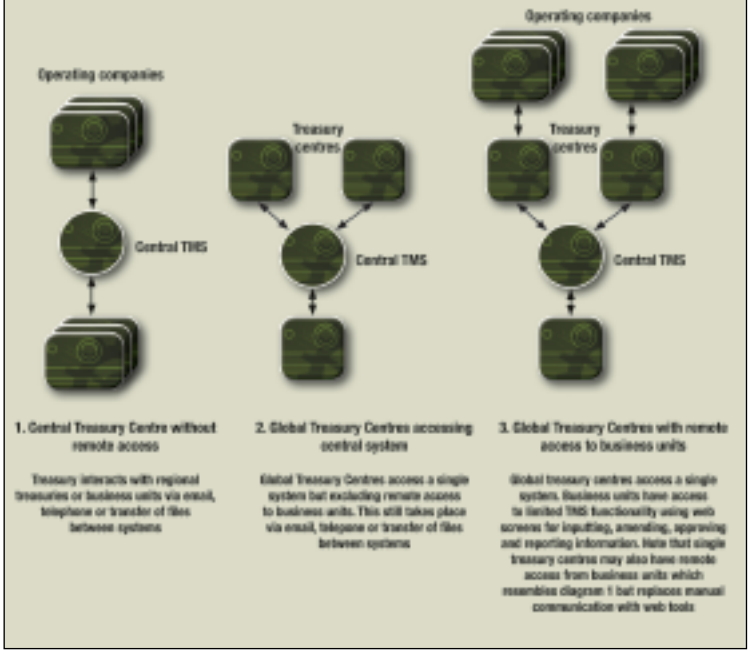


**Figure 2:** Treasury infrastructure options




**BUSINESS UNIT COMMUNICATION** Companies structure their treasury and financial operations differently. Table 2 (see page 10) shows three possible structures. In reality, however, many treasuries use a combination of these structures and are increasingly:

- acting as a service provider to the company; and
- responsible for global reporting, even in a decentralised environment.

These factors have led to a growing need to develop the TMS infrastructure from being a central system accessed only by the treasury team, to being a solution which caters for the wider treasury needs of the company. Figure 2 depicts the options in structuring a treasury.

Treasury systems have evolved from central treasury centres to global treasury centres accessing a central system and then to global treasury centres with remote access. The change has been driven by developments in the role and organisation of treasury, such as incorporating multiple

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## TMS

**Table 1:** TMS reporting options

| | |
|---|---|
| **Cash management reports** | ■ Bank reconciliation: summary of reconciled and unreconciled position, listing exceptions<br>■ Cash position: today's cash position and short-term forecasts (eg. for the next five days). This should include opening balances by currency/account, treasury activities (eg. settlements, maturities, interest and premium payments) and expected business activities (eg. payables/receivables) to enable users to see the total cash per currency per location to invest/borrow<br>■ Bank account charges |
| **Audit reports** | ■ Summary of user activity by user, date, time, action<br>■ Summary of deal changes by user, date, time, action<br>■ Summary of attempted unauthorised actions<br>■ Changes to static data |
| **Limit report** | ■ For each type of limit monitored<br>■ Limit utilisation<br>■ Limit breach report between dates |
| **Position report** | ■ Outstanding position for all instruments, marked to market |
| **Transaction report** | ■ Transactions either outstanding or between dates<br>■ Unconfirmed transaction reports |
| **In-house banking reports** | ■ Intercompany account statement, including interest allocation<br>■ Trial/final netting statement – per business unit and net position |
| **Cost of funds report** | ■ Money market average yields achieved<br>■ Bank account interest checks<br>■ Bank account interest allocation for pools<br>■ In-house bank account interest allocation |
| **Accounting reports** | ■ Posting report<br>■ Accruals report<br>■ Revaluation report<br>■ Trial balance report |
| **Cashflow accounting** | ■ Forecast cashflows in time "buckets" across short/medium/long-term time horizons<br>■ Cashflow per currency, operating unit, location/cash pool, instrument, etc. |

**Table 2:** Three possible treasury structures

| | |
|---|---|
| **Centralised** | ■ All financial activities conducted in a single location |
| **Regional** | ■ Financial activities conducted in regional treasury centres and consolidated for global reporting |
| **Decentralised** | ■ Financial activities conducted at local level. Treasury may provide debt and investment management, act as an in-house bank and/or in an advisory capacity. |

treasury entities, in-house banking and cashflow forecasting. Most commonly used TMS facilitate all these different structures. The type of information required or distributed by treasury will vary according to the degree of centralisation and the specific functions conducted by treasury, but they typically include:

- FX requests or exposure notification;
- funding requests;
- deposits with treasury;
- locally transacted deals;
- cashflow notification – eg. large in/outflows due;
- internal/third-party flows for netting; and
- cashflow forecasts – short, medium and long-term.

This information may be manually entered using the treasury management system's web screens, or imported from other systems.

The type of reporting typically retrieved from a TMS includes:

- transaction and position statements;
- netting statements; and
- in-house bank current account statements.

The ability to obtain information on a timely basis from across the business is critical in allowing treasury to conduct operational tasks such as in-house banking and multilateral netting, and strategic tasks such as cashflow forecasting, risk management and global liquidity management. Boxes 1 and 2 illustrate the process using multilateral netting and cashflow forecasting as examples.

**OPTIONS FOR LICENSING A TMS** Traditionally, TMS have been licensed to companies for an upfront licence fee, and periodic support and maintenance fees are paid to cover the cost of helpdesk support, issue resolution and software upgrades. This model remains the most popular and is still the most appropriate for many companies, but improvements, particularly in web technology, mean there are now alternatives for companies which need a TMS but cannot justify the initial investment or continuing hardware/software upgrade and maintenance.

For example, an application service provider (ASP) is an outsourced service now used by many suppliers of treasury technology. There are two key types of ASP service available:

- **ASP hosted service**. This form of outsourcing assumes you will still license the TMS under the traditional model and pay periodic support fees. However, rather than the software being installed at your location and your IT team supporting it (providing database backups, upgrading the database management system, etc.) the software is hosted by a third party that then provides the maintenance service.

The way you access the application can vary but for a web-based system will be via the internet. Alternatively, software such as Windows Terminal Server or Citrix server may let you remotely execute applications from a wide range of devices over virtually any type of network connection.

A hosted service may be available from the TMS supplier, or from another third party.

- **ASP managed service**. Under a managed service, the company pays a rental fee which includes both the right to use the TMS and the cost of support and maintenance. This service is generally provided by the TMS supplier or its

nominated third party. Depending on the supplier you still maintain your own unique database, which can then be customised according to your specific business needs, or a shared service, in which you rent the use of a preconfigured database which is accessed by multiple clients, with access to restricted data using security tools within the application.

There are several potential benefits to a managed service, particularly in the faster speed of implementation and reduction in upfront cost, although it may bring loss of flexibility. There can also be advantages for the supplier, as it receives regular monthly income, providing long-term business stability, and there is less need to maintain multiple versions of a product in different technical environments. Some suppliers have opted strategically to provide their software only on a managed basis.

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*The first part of this series, in the Winter 2011 issue of Cash Management, explained the rise of the treasury management system and the capabilities of the technology.*

## **Box 1:** Multilateral netting example

Historically, multilateral netting was undertaken outside the TMS in a specialist system and in some companies this is still the case; however, a number of TMS now provide multilateral netting capabilities, particularly now that business units can access the TMS directly.

Although multilateral netting processes differ by company (for example, some are payables-driven whereas others are receivables-driven; some include third-party payments as well as intercompany financial flows), a typical intercompany payables-driven multilateral netting process could include the following:

- The TMS collates the flows from across the business and applies FX rates according to the business rules used by the company.
- Business units input/upload information on their intercompany payments to the TMS remotely.
- Business units can access a trial netting statement so that they have a provisional view of their net position.
- In some cases, business units may make amendments to the information they have provided and/or might approve their net position.
- The TMS creates the transfers and internal FX deals resulting in a net position per business unit which is either paid physically and/or the internal (in-house bank) current account updated.

## **Box 2:** Cashflow forecasting example

Companies' forecasting arrangements differ according to their industry and culture. For example, companies which are cash-rich, have highly volatile flows, and/or are entirely centralised may only forecast in the short term (eg. up to one month) whereas companies which are acquisitive, need to optimise their debt structure or headroom, and/or have significant cashflow activity distributed across the group may forecast over a longer period.

From a technology standpoint, the tools are very similar: information from the business units or from other systems is combined with treasury information within the TMS to create a cash position over the required time period. The diagram shown here provides just one example of how a treasury may present the information.

Irrespective of whether a forecast is produced over the short, medium or long term, the decisions to be made over the presentation of data include:

- time horizon (the length of time over which the forecast will be produced);
- time "buckets" (the periods within which cashflow forecast should be shown – daily, weekly, monthly, quarterly, etc); and
- cashflow groupings (by currency, business unit, currency equivalent, cashflow type, etc).

The important features in a TMS in the area of cashflow forecasting include the ability to:

- interrogate this information – ie. to find out the detailed information underlying each summary forecast item;
- change the view of the forecast so that the same information can be viewed using different criteria;
- allow business units to see their forecasts on the TMS as opposed to their spreadsheet submissions (when analysing the forecast it is vital that both treasury and the operating unit have exactly the same view);
- allow business units to amend their forecasts easily and for this to be auditable. For example, treasury may have hedged a set of forecasts totalling $3,500,000 for three months forward; the forecasts then change significantly so the hedge is compromised. Treasury needs to be aware of changes in forecasts so that hedges can be adjusted and feedback provided to the business units;
- add "intelligence" into longer term forecasting to allow analysis of forecast data such as assumed re-investment, and sensitivity analysis (such as changes in energy costs); and
- export the TMS forecast – eg. to Excel for hard copy presentation or for further analysis.