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BASIC SECURITIES RECONCILIATION FOR THE BUY-SIDE

An overview of the reconciliation process from Duncan Wheatley, CTO, Watson Wheatley

INTRODUCTION

This paper focuses on the operational control requirements of a buy-side securities trading firm with particular reference to post trade reconciliation. It is not about any specific company or indeed any specific organisation types, but looks generically at what might be termed “good practice” for the securities trading reconciliation process.

The paper assumes the availability of technology designed to automate the process. By this we mean a system designed specifically for securities reconciliation that understands the context of the market, the data available in portfolio accounting systems, can work with the range of instrument types traded, and at all times can record events in a detailed audit trail.

WHAT TO RECONCILE

The simple answer to this is “everything that the data allows”, but let’s be a bit more specific. In our context of a buy-side firm, reconciliation is taking place between data received from two, or perhaps three different systems. The internal system is what the firm has provided as its trading or portfolio accounting system. This might be installed internally, or provided as an ASP. The external systems are those of the counterparty, clearer, custodian, administrator etc. Each system purports to have the same data and the reconciliation is required to ascertain this, or at least to manage and act upon the differences.

The inputs to the internal system are the trades conducted by the asset manager. These are subsequently communicated to the external party where they are input to the external system. Other trades may be conducted by the external party (perhaps FX) and there are usually cash flows that the external party knows about but need to be reflected on the internal system.

The flow of trade and transaction information between the two parties is continuous, subject to timing delays and subject to translation and/or transmission errors. A reconciliation and remedial action process is required to correct the differences, but since there are timing differences here too and data sets tend to be delivered in discrete batches, then the best that be expected is a kind of dynamic equilibrium where all differences are known and can be managed.

Another important aspect of this is that the data that accounts for differences and that needs correcting are transactions, prices, exchange rates etc. not the derived information that is computed by the portfolio accounting system e.g. positions, cash balances, profit etc. All too often a manual reconciliation process looks at the equality of derived numbers only and draws conclusions (often incorrectly) about the equality of the underlying data.

Reconciliation must take place at the most granular level of the underlying data.

Derived values can and should be used in a full reconciliation but primarily as a means of confirming the validity of the underlying data or to represent the results in terms other stakeholders can use.

SOURCING THE DATA

For any reconciliation system to operate effectively it must be fed with readable detailed data. As discussed above this needs to be trades detailing the security, the trading account (both internal and external references), the commercial details of the trade (quantity, direction, cash flows, trade price etc.), cash flows (which need to include detailed transaction types), security positions by account/fund etc, cash balances by account, currency etc.

This is usually, but not always, easy enough to obtain from internal systems. Obtaining data from external parties can be a challenge, but most firms have web portals from where consistently formatted data can be downloaded easily, or better still, can supply automatically extracted data on secure ftp sites. There is very rarely any need to scrape data from PDF documents. There is no standardisation here, so your tools will have to live with this.

With trade and cash flow data, the best approach is to extract transactions from the internal system by posting date so it is possible to pull all transactions posted say on the previous business date. This ensures continuity and completeness of data, but it does mean you will receive and will need to deal with all cancellations and corrections. What you are looking for is a snapshot of the status of the system containing the data at successive points in time (usually daily, but potentially every hour), and of course, the transactions that account for the difference between successive snapshots.

External data providers know this and this is what you will get

generally in well-constructed files. You will need to ask them specifically how they annotate cancellations and corrections so you can properly identify them in the reconciliation system and prepare specific rules to match them.

DATA IMPORT

Getting your data into the reconciliation system will require an ETL tool (Extract, Transform, Load). Most reconciliation systems come with these. Their purpose is to read the source files, translate the data so that it can be recognised by the reconciliation system database, and finally to post the data to that system. This translation is where your audit process should begin. You are transforming source data and as soon as you do that your auditors will want to know how that was done. Ensure your ETL tool is able to deliver this.

If you have a lot of files each day coming from different suppliers at different times, then automating the transfer and import is vital. It also means no users touch the data, thus protecting the audit trail from “manual intervention”.

The ETL tool needs to understand what is expected and to react immediately data becomes available.

It would make sense that the import process can be reversed so that errant data files can be removed easily and replaced. The ETL tool would benefit from being able to recognise correct or incorrect data files and reject if they do not meet the defined acceptance criteria.

VALIDATION

There is very little point conducting a reconciliation where the accuracy and integrity of the source data cannot be ascertained and demonstrated. This step in the process must be addressed.

Whilst validating the data before it arrives in the reconciliation system is the job of the ETL tool, it can only really deal with the more obvious breaches of integrity e.g. the wrong business date or indeed the wrong file.

The reconciliation process itself is intended to identify differences, but if left to this point it can be difficult to determine whether a difference is due to inaccurate or incomplete data or a real reconciliation difference. Not a good idea.

We think there is a vital step in the process between file translation and reconciliation that is the job of the reconciliation system. Here is where one of the key benefits of importing

positions and cash balances can be obtained. If the reconciliation system understands the relationships between underlying transactions and derived data, just like a portfolio accounting system, then it can simply validate the source data by working the calculations backwards and identify the errant items.

Further, and rather beyond what portfolio accounting systems do, the relationship between two sets of data being reconciled can be expressed mathematically irrespective of the status of the matching. A system that can compute this is able to measure precisely the relative integrity of the two data sets. Any incorrect data or even any incorrectly matched data will throw the relationship out of balance alerting the user to the event and triggering remedial action to correct the discrepancy.

The net result of all this effort is to secure the integrity of the data to be matched and make the matching process rather easier and much more meaningful.

MATCHING

There really is no substitute for user configurable rules based matching logic. Rules will need to change over time, and the audit trail needs to “remember” the rules that were run historically. Since a reconciliation system aims to identify exceptions, this implies that items matched by rules (ultimately 100% of the items) will generally be ignored by users of the system. It is imperative therefore that rules are tested, validated, authorised and locked down to ensure they only match what they were designed for.

You will need 1:1 and aggregate rules, and you will need to be able to match on individual fields, combinations of fields and also derived values e.g. price difference less than 0.5% of portfolio’s total market value. You will also need to be able to handle tolerances based on absolute difference, relative difference, currency corrected difference and tolerance based on other derived data e.g. total market value.

The matching should result in sets of transactions, prices, positions etc. that form a match set. The rule responsible, the time it was matched, the user who matched it etc. is all necessary for the audit trail. If the items are unmatched by user intervention or rules, then this is an auditable event and needs to be recorded. Proposed matches may need to be approved by a manager, and the logic to support his needs to be contained in the reconciliation system.

Manual matching may be required in some circumstances, but it is important that this also adheres to agreed rules. Now what

you are left with is a set of exceptions or breaks. If you are dealing with high volumes then this will not be good enough. You need to know why these items are not matched; after all you can now ignore all the matched ones, but you do need to focus on sorting out the breaks.

REMEDIAL ASSIGNMENT

A good reconciliation system will annotate all the breaks for you with a reason and a possible action, and will perhaps even assign them to users or teams to deal with. The rules engine can deliver sets of transactions that do not match for specific reasons and can annotate them for remedial action.

There are many reasons why breaks occur in reconciliation. Assuming they are not integrity issues (which should have been weeded out by the time you reach this point) they can be anything and everything. Hence the need for the user definable rules based approach used for remedial assignment as well as matching. If recurring causes can be identified then a rule can isolate and annotate these. Using a reconciliation system over time will allow additional rules to be added to cater for different scenarios.

CORRECTIONS

Having identified breaks and the reasons for them, the final step is fixing them. Internally created errors (perhaps manual booking errors) can be remedied by going back to the portfolio accounting system and amending the trade. This will trigger additional data coming to the reconciliation system, perhaps a changed position, or a changed cash balance alongside the amended trade. Whatever the change, the new data will (or should if conducted correctly) match with the external data, and the reversed original transaction will match with the original breaking trade. New balances and positions ensure that the reconciliation system integrity is retained. An additional benefit of a reconciliation system here is that they can export the required correction to the internal portfolio accounting system (assuming a rule allows it to) thus automating another part of the workflow and taking human error out of the equation.

Similarly errors identified as being created by the custodian or external party can be identified and sent automatically using a rule to the service provider for review and correction. If in agreement they will amend their data and next time it is uploaded to the reconciliation system the breaks will clear.

This is really where reconciliation systems need to be; acting here as a moderator between two other systems automatically keeping them in line and

reporting the reasons why, at any point in time, they do not agree.

OPERATIONAL INTEGRITY

Breaks and their resolution recorded in a reconciliation system provide powerful information allowing operational weaknesses to be identified and quantified. If you can identify such weaknesses and can determine their scale and frequency, then these operational risks can be systematically eliminated from your process.

A systematic process of analysing the break information over time will ensure that key risks are eliminated or reduced and the reconciliation process become progressively easier and quicker. The data in your reconciliation system will become more accurate; your traders, clients and auditors will appreciate the efforts you have put in to mitigate risks. New prospects will be impressed by your operational diligence, and you won't have to sit in front of your firm's client relationship managers to explain what went wrong! On the plus side, imagine sitting down with your service providers with this kind of information at your fingertips!

**BEST PRACTICE
RECONCILIATION.**

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