Integrated Reconciliation

A process view with scorecard on automation, complex instruments, and custom reporting

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In daily operations, the processes we use to reconcile trade, position, and cash transactions still leave a number of drawbacks: integrating complex instruments, custom reporting, and faster resolution to name a few. Even with a broad range of tools automating the flow of data, one of the greatest drains on productivity remains non-standardized identifiers and manual handling of mismatched data. Achieving a holistic view is persistently challenged by roles dedicated solely to specific tasks, such that the more powerful recognition of trends and patterns is sacrificed for one-use solutions that cannot be scaled.

The modern manager would benefit from greater integration of people and process, work and information. The challenge is not just to enable better accounting via accurate reconciliation, but to enable better information sharing to foster agile reporting and savvier investing. Recognizing that
reconciliation processes are increasingly complex, certain managers have taken an integrated and rule-based view of reconciliation. Ideally, these managers case the nature and triggers of breaks with a mind to move beyond silos of information to a sustainable and repeatable solution.

This paper offers a simplified scenario for managers that trade many types of securities and perform a number of separate reconciliations that are both handled and not handled by a combination of tools, staff, and processes. The paths involved here are about Data Aggregation and Mapping, Casing Breaks, and Break Resolution and Analysis.

The trio – Data, Casing, and Resolution – requires a commitment of time and resources exemplified by a simple ratio. We hypothesize that ratio to be 2:5:3, where resolution is allocated 30% of the total time and resources (a percentage which is often inadequate after heavy trading).

As a manager moves toward integration, the ratio is expected to improve to a more efficient 1:3:6 score as fewer resources are spent on data and casing. More time can then be invested in resolution and process improvements.
Actual processes and actual systems vary, as business needs are increasingly unique. With a wide range of asset classes and a lack of standardization, scalability highlights the need for more efficient and automated systems that can efficiently transfer information from one system to another.

This paper explains a solution in an integrated, rule-based process:

- Integration means joining quantitative data alignment and source synchronization to a qualitative ability to analyze break trends while making repairs at the source.
- Integration allows breaks to be viewed via a simplified and unified exception management process across funds and brokers.
- A rule-based process is best achieved when all tools, processes, and strategies are viewed as one.
Executive Summary

The solution here is a robust management process that provides business intelligence reports to indicate where, when, and why breaks happen and enable staff members to create solutions that auto-map recurring mismatches.

The optimal process is about:

**Timeliness:** Mapping data sources and producing customized reports for both position and cash improves timeliness. This is the central feature of scalable, flexible middle- and back-office operations.

**Standardization:** Recording a broad range of asset classes in a standardized manner would be a great boon to productivity.

**Benefits of an integrated reconciliation**
Homogeneity in reconciliation is the key and supports:

- Timeliness
- Standardization of reporting formats
- A robust portfolio picture
- Identification of out-of-balance components
- Skill and experience commensurate to a broad range of investment types

Evaluating operations according to efficiency, scalability and speed is essential for a smooth stream of information, moving from data alone to a more holistic and integrated view of reconciliation as a process. It is one path a manager can take in achieving a higher level of proficiency in the structure of their operations.

Outsourcing becomes a comprehensive option and a readily available tool for the manager to employ in pursuit of a more efficient, timely, and reliable flow of data. *A strong and effective reconciliation system in the middle and back office enables the manager to do exactly that, allowing for a greater focus on the investment challenges at hand.*
The State of the Reconciliation

Introduction

At first glance, it may seem that reconciliation is a fairly “settled” matching activity of trade, position, and cash transactions, and managers have developed processes that largely fulfill their day-to-day needs. With as many as 35 stand-alone or bundled reconciliation tools available for purchase that automate approximately 60-65% of the listed and 50% of OTC data flows¹, the landscape would seem stable and serene. Yet upon closer examination, the scene is far less settled, and this phenomenon is not the concern of just a few managers. Even with the abundance of tools available to all parties involved in listed and OTC post-trade activities, the non-standardized manual handling of the remaining ~40% listed and 50% OTC remains one of the greatest drains on productivity.

Manual chore heavy activities detract from the more intelligent reviewing and resolving functions that search for patterns in mismatched data. Additionally, as roles have become highly specialized within each product group, sharing workloads and integrating information amongst them is greatly diminished. Without integration, comprehensive reporting that is sufficiently vigorous to alert a manager to global mismatch patterns is almost impossible to achieve. Knowledge of these trends — combined with permanent improvements in system integration, data handling, and shared processing — allows for a highly efficient system.

While integration is appealing in theory, the experienced CFO/COO will question its feasibility in the presence of product silos, inflexible processes, and heavy volumes. Identifying trends and removing the sources of breaks so that they do not reoccur is supplanted by competing priorities

¹Global Custodian reconciliation survey of managers with $1 billion or more in assets under management. September 2014.
In a recent survey on reconciliation by Global Custodian, respondents from the largest managers surveyed indicated that their current solutions were not sufficient. They listed faster resolution, integration of complex instruments, and automation as components of their processes that presented the greatest challenges. When asked which tools they used for reconciliation, managers listed more than 35 systems (a mix of full, bank, and non-reconciliation systems) and multiple short-term arrangements.

1. Broadridge’s PROactive
2. Easy Match
3. Electra
4. Fiserv Accurate
5. FMC Recon / SS&C Recon
6. Geneva Advantage
7. Gresham CTC
8. HazelTree
9. IntelliMatch
10. i-Recs
11. IVP Cosmos
12. Markit WSO Web
13. Smartstream Corona / Smartstream TLM
14. Stematch Sterci
15. Tri Optima
16. Adra Match
17. CheckFree FUND
18. Frontier / Recon Frontier
20. Broker Dealer account system
21. Carmen
22. EZE Software Group Tradar PMS
23. EZE Castle OMS
24. Globalsys Gbroker
25. Investran
26. Microsoft Excel
27. Microsoft VBA Tools
28. MIK Fund Solutions
29. Misys Optics
30. Nirvana Solutions
31. Omgeo Oasys
32. OPNSC PCS Custody
33. Pro Opticus
34. Sidoma
35. SimCorp Dimension
36. StatPro
37. Sub-Custody System

Every day. However, there are examples of managers who have succeeded in sharing workloads and integrating information amongst product groups into one process. What these managers share is an integrated view of reconciliation as the bridge into all their operations.

They have replaced the commonplace and humdrum alignment of two sets of records with a deliberate rule-based method of casing the differences between records or systems and have worked towards integrating these variances across their operations.

Continuously improving practices during reconciliation of $200 billion in hedge fund assets over time leads us to conclude that an integrated process that begins with categorizing breaks, their triggers, and the nature of each break is at the heart of modern reconciliation. The grouping requires combining strategies, staff, and tools into one process from which to derive homogenous information. It moves beyond mere matching and towards information sharing and management reporting. The accuracy and breadth of managing information in the absence of silos shields managers from trading on incorrect information or cash discrepancies. The resultant increase in the velocity of business and investment decisions as a result of confidence in reporting has become a competitive advantage.

Systems: Tools for one, none for all

Across systems

A cacophony of systems

It makes business sense to focus on maximizing solutions that fulfill operating essentials day-to-day, whether these are a manager’s or a provider’s. Often specific processes and systems are developed as solutions for each operating need. The result is a cacophony of systems that do not easily integrate with each other. One fund, for example, may prefer one order management system over the many other options because it streamlines execution of the bonds it trades frequently. Hence, with a wide range of asset classes and in the absence of standardization across the cacophony of systems, breaks prevail. Managers require either an automated engine to transfer information from one system into a stream compatible with the next or they adapt to manual intervention, with its accompanying deleterious effect on efficiency.

Qualitative phases are underserved

Because the various tools available for reconciliation have difficulty fulfilling the qualitative phases of reconciliation, these phases remain
underserved. Fifty percent of the survey respondents indicated limited automation capabilities, difficulty in integrating complex instruments, and the inability to generate custom reports as continuing drawbacks. While each tool has merit by providing all or a combination of position and cash reconciliation, few tools offer the ability to customize around rule building and mapping, and how output is defined. An integrated view, by contrast, focuses on the quantitative alignment of data and ensures that sources are synchronized. It also includes a qualitative structure to analyze breaks and incorporates resources to work on improving the quality of the source information.

This paper suggests the ideal is a 1:3:6 ratio, where 60 percent or more of time and resources is devoted to resolutions and analysis, 30 percent or less is used for the casing of breaks, and 10 percent or less is allocated to data preparation. Scoring the firm on these ratios and moving towards a more efficient process approach enables managers to drive the reconciliation equation rather than being driven by it.

**Data aggregation and mapping**

Generally, these tools automatically handle 60-65% of listed data flows and the remaining 35-40% is completed manually. However, the auto-matching percentages for OTC are closer to 50%. These instruments often rely on “work-arounds” that use existing categories to find a fit. As a manager’s operations grow, these “work-arounds” cannot keep pace with the scale required, hindering the flexibility to add new systems, strategies, accounts, and counterparties...

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2 Global Custodian survey results
3 Viteos internal record keeping

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An integrated view includes a qualitative structure to analyze breaks and incorporates resources to make repairs at the source.

A process approach enables managers to drive the reconciliation equation rather than being driven by it.

...“work-arounds” cannot keep pace with the scale required, hindering the flexibility to add new systems, strategies, accounts, and counterparties...
accounts, and counterparties. The OMS, for example, may record an equity swap as a listed equity, while the PMS records it as an equity swap. This could result in cash flows because of financing costs.

In cases where the administrator provides break reports, there can be as many as 200 separate files to review that require comment. The more compartmentalized the data is, the more tedious this handling becomes. If a mismatched trade occurs across entities, for example, comments are needed in all files where it occurs before they are returned to the administrator. In addition, patterns of breaks are overlooked when this many files are handled manually. In an integrated reconciliation, breaks can be viewed using a simplified exception management process that provides a unified view of breaks across funds/brokers. This also aids in managing the exceptions in a much more robust manner.

**Break categories and triggers**

*Rule-based process*

In a well-organized, rule-based process, the origin of a break is first identified at the Category level: is it data-, system-, or process-related? This then helps identify two possible Triggers, which in turn lead a person resolving the break to a choice between several possible Natures.

Source: Viteos
<table>
<thead>
<tr>
<th>Nature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Identifiers</td>
<td>Differing internal or external identifiers for an asset class depending on source and systems.</td>
</tr>
<tr>
<td>Setup attributes</td>
<td>Various attributes, such as ISIN, maturity data, Bloomberg ticker, etc.</td>
</tr>
<tr>
<td>Processing nuances</td>
<td>How each system deals with a security; in some cases there may be an adaptation utilizing a work-around, e.g., equity swap set as equity in a system.</td>
</tr>
<tr>
<td>Reporting ability</td>
<td>Ability to produce reports by attributes on a multidimensional data set, i.e., by asset class, aging, break type, entity, currency, etc.</td>
</tr>
<tr>
<td>Range of asset classes</td>
<td>Does the process accommodate all traded asset classes?</td>
</tr>
<tr>
<td>Adherence to agreement</td>
<td>Parameters are set as defined in an OTC agreement.</td>
</tr>
<tr>
<td>Accuracy of data</td>
<td>Quality of information.</td>
</tr>
<tr>
<td>Data formats</td>
<td>Machine readable / non-machine readable formats.</td>
</tr>
<tr>
<td>Timeliness</td>
<td>Time for processing information, which may be dependent on various factors—arrival of files, completion of processing by other systems, personnel availability in other time zones.</td>
</tr>
<tr>
<td>Data interpretation</td>
<td>Basis of how a system may infer information on various aspects around financing cost, interest calculation, etc. There may be differences in outputs.</td>
</tr>
<tr>
<td>Conventions used</td>
<td>360 versus 365 days for calculation of bond interest.</td>
</tr>
<tr>
<td>Reporting logics</td>
<td>Basis of logic used to layout reports—the kind of reports depends on end user requirements and customization of the reports.</td>
</tr>
<tr>
<td>Range of asset classes</td>
<td>Does the process accommodate all asset classes across market?</td>
</tr>
<tr>
<td>Number of markets</td>
<td>Conventions and requirements differ across markets and increase the total to account for as markets are added.</td>
</tr>
</tbody>
</table>
Managers are often forced to resolve breaks by recording complex securities in ways that work with the current technology infrastructure.

Common causes that fall into the multiple systems category are disparities in the handling of asset class, processing capability, and integration to multiple upstream and downstream reporting systems. Furthermore, managers are often forced to resolve breaks by recording complex securities in ways that work with the current technology infrastructure. Without a standard method for dealing with such situations, these work-arounds lead to processing and reporting disparities. The moment one system feeds into another, breaks occur because these securities either are not recognized or are recognized as a different asset class.

The multitude of systems: OMS, PMS, Reporting Systems, Risk Systems, Accounting, results in outputs in various formats. To add fuel to the fire, manually handling these to accord with what a manager wants to view adds to the complexity and generates process inefficiencies. Other common issues result from the vendor source used in computation of output data. This is more common in pricing and valuation breaks.

The integrated process

A good rule engine is a key characteristic of the integrated process that aligns data, tools, and methodology.
Benefits of an integrated reconciliation: Data homogeneity is the key

A common base makes possible business intelligence in the form of robust management information reports to indicate where, when, and why breaks occur, including, for example: reporting breaks by traders; prime broker; asset classes; and value.

Reporting aging of breaks and uncovering the sources of the errors can help to improve efficiency. This level of reporting is almost impossible to achieve in silos. A global view across prime brokers, administrators, and other interested (and often multiple) parties is the common base that moves a firm towards an advanced view of reconciliation that enables managers to analyze patterns.

Outsourcers are especially adept at uniformity, managing information reporting that captures trends, and finding permanent resolutions via best practices and checklists. If a disproportionate number of breaks from one source require time to resolve day-to-day, the outsourcer will collaborate with their client and the source to eliminate the cause. Eliminating wasteful trends uncovered through robust reporting improves capacity utilization of their operations across clients. Their endgame is to maximize productivity without having to add headcount. Automating as much as possible and continually seeking ways to improve current processes is passed along to clients via technological and intellectual capital.
A rule-based process gives flexibility to cover all asset types and unearth patterns to deal with systemic problems.

A global view driven by automation is a more efficient scenario. Here, individuals supporting reconciliation shift from being strictly data clerks to reviewers enabled by a common base of reporting in one process. They track and resolve outstanding items to reduce aging, increase accounting flexibility to cover all asset types, and unearth patterns to deal with systemic problems.

Control Sheet — Cash Break Analysis examples. Six possible reports available from a common base of homogeneous information.

Notice that the grand total for each report is the same.

<table>
<thead>
<tr>
<th>Report By Category</th>
<th>Value</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income Break</td>
<td></td>
<td>60</td>
</tr>
<tr>
<td>EUR</td>
<td>1,007</td>
<td>4</td>
</tr>
<tr>
<td>USD</td>
<td>180,390</td>
<td>40</td>
</tr>
<tr>
<td>AUD</td>
<td>443</td>
<td>1</td>
</tr>
<tr>
<td>CHF</td>
<td>1,994</td>
<td>1</td>
</tr>
<tr>
<td>GBP</td>
<td>13,400</td>
<td>7</td>
</tr>
<tr>
<td>JPY</td>
<td>236,345</td>
<td>7</td>
</tr>
<tr>
<td>Non Trade Break</td>
<td></td>
<td>100</td>
</tr>
<tr>
<td>USD</td>
<td>617,615</td>
<td>100</td>
</tr>
<tr>
<td>Trade Break</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>EUR</td>
<td>4,566</td>
<td>2</td>
</tr>
<tr>
<td>USD</td>
<td>374,279</td>
<td>7</td>
</tr>
<tr>
<td>JPY</td>
<td>10,000</td>
<td>1</td>
</tr>
<tr>
<td>NOK</td>
<td>52,132</td>
<td>2</td>
</tr>
<tr>
<td>Corporate Action Break</td>
<td></td>
<td>12</td>
</tr>
<tr>
<td>EUR</td>
<td>4,254</td>
<td>2</td>
</tr>
<tr>
<td>USD</td>
<td>35,608</td>
<td>9</td>
</tr>
<tr>
<td>CHF</td>
<td>1,220</td>
<td>1</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>184</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Report By Portfolio Manager</th>
<th>PM Code Name</th>
<th>Value</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>PM A. Smith</td>
<td>USD</td>
<td>995,868</td>
<td>111</td>
</tr>
<tr>
<td>PM B. Smith</td>
<td>EUR</td>
<td>9,827</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>USD</td>
<td>211,894</td>
<td>42</td>
</tr>
<tr>
<td></td>
<td>AUD</td>
<td>443</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>CHF</td>
<td>3,214</td>
<td>2</td>
</tr>
<tr>
<td></td>
<td>GBP</td>
<td>13,400</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>JPY</td>
<td>246,345</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>NOK</td>
<td>52,132</td>
<td>2</td>
</tr>
<tr>
<td>PM C. Smith</td>
<td>USD</td>
<td>131</td>
<td>3</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>184</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Report By Product</th>
<th>Value</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fixed Income</td>
<td></td>
<td>111</td>
</tr>
<tr>
<td>USD</td>
<td>995,868</td>
<td>111</td>
</tr>
<tr>
<td>Equity</td>
<td></td>
<td>70</td>
</tr>
<tr>
<td>EUR</td>
<td>9,827</td>
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<tr>
<td>USD</td>
<td>211,894</td>
<td>42</td>
</tr>
<tr>
<td>AUD</td>
<td>443</td>
<td>1</td>
</tr>
<tr>
<td>CHF</td>
<td>3,214</td>
<td>2</td>
</tr>
<tr>
<td>GBP</td>
<td>13,400</td>
<td>7</td>
</tr>
<tr>
<td>JPY</td>
<td>246,345</td>
<td>8</td>
</tr>
<tr>
<td>NOK</td>
<td>52,132</td>
<td>2</td>
</tr>
<tr>
<td>Derivatives</td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>USD</td>
<td>131</td>
<td>3</td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td>184</td>
</tr>
</tbody>
</table>
In the midst of daily confirmations, trade bookings, and other activities, reconciliation often takes the lowest priority as staff members juggle a number of responsibilities and overlapping requests from the front office. Managers need a robust reconciliation process that goes beyond just matching and operates at high volumes in a multifaceted environment. Another feature to look for is the inherent flexibility to report at any time and in any format required. In addition, the system must enable staff members to create solutions that prevent the same types of breaks from recurring repeatedly.

For portfolios with similar holdings and trading activity, an integrated perspective on reconciliation is required to achieve proficiency on each of the five levels listed below. It becomes a health check for the entire back and middle offices, builds credibility with the front office, and is transparent to investors.

The system must enable staff members to create solutions that prevent the same types of breaks from recurring repeatedly.

…it becomes a health check, builds credibility and is transparent to investors…
1. **Uniformity of output reflecting a common base**: Having established the differences, the focus is then to resolve the breaks and arrive at a common base for the data. This homogeneity of information strengthens operational controls.

2. **Health check**: Efficiency suffers when the reconciliation framework is ill-equipped to highlight trends and instead simply focuses on resolving issues such as incorrect trade information, missed corporate actions, erroneous settlement amounts, and mistaken commission charges. Incorporating a checklist of necessary actions helps define when a particular type of break is trending as a result of the system setup and will uncover the cause the first time a break is resolved. It will also prevent the same breaks from occurring in the future. If a commission break occurs with a particular broker whenever a certain security is traded, for example, a robust process will do more than simply resolve the break. Instead, it will follow a standard course of action that results in an audit of the written commission schedule and its electronic setup; this audit will help reveal the fault in the system so that it can be rectified. Similarly, breaks that occur whenever specific securities are traded between two particular parties may be due to a difference in the security masters as set up in each party’s system.

3. **Data synchronization**: This first step corrals mismatches into a group that is arranged and prioritized in a manner intended to efficiently bring the various data sets into harmony once each mismatch is addressed or resolved. A robust reconciliation ensures that all the data are in sync.

4. **Risk and control**: A reconciliation system that can provide pinpoint accuracy on daily positions, cash balances, fees, commissions, settlements, and other charges is a highly credible process that CFOs will appreciate.

5. **Transparency**: An independent reconciliation process that describes the nature of breaks and their materiality and reduces resolution time accentuates the precision of a manager’s back-office operation.
Here is a scorecard for your health check.

<table>
<thead>
<tr>
<th>Measures</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) More than 10 percent of time spent on collation and preparation of data for the report</td>
<td>☒</td>
<td>☑</td>
</tr>
<tr>
<td>2) Breaks of more than 10 percent in certain asset classes</td>
<td>☒</td>
<td>☑</td>
</tr>
<tr>
<td>3) More than 48 hours resolution time</td>
<td>☒</td>
<td>☑</td>
</tr>
<tr>
<td>4) Uncompleted T+0 trade reconciliations at close</td>
<td>☒</td>
<td>☑</td>
</tr>
<tr>
<td>5) More than 70 percent manual process</td>
<td>☒</td>
<td>☑</td>
</tr>
</tbody>
</table>

Management information breaks by

- Portfolio manager
- Prime broker/custodian
- Asset classes
- Value
- Currency
- Age
- Strategy

Source: Viteos reconciliation activities as benchmark

Understanding the optimal process

Timeliness

Constructing a reliable and dependable process, whether in-house or outsourced, requires competency in each asset class and command of the flow from source to final report. Augmenting those skills with a flexible reconciliation tool capable of mapping data sources and producing customized reports for both position and cash improves timeliness — the central feature of scalable, flexible middle- and back-office operations. Timeliness is achieved by:

- an appraisal of the quality of data and its sources
- a quest for scalable and customizable improvements to technology
- deliberate addition of the best skill sets in the right time zones
- the incorporation of robust oversight into the process.
As an extension of operations, a global team provides pre-open reports, as the depth and breadth of investments continue to scale worldwide. The institutional investor is the catalyst to this phenomenon, which is driving managers to rethink the back office. Many are realizing it is extremely difficult to sustain with an internal team alone, and so are developing partnerships with capable, outsourced service providers.

*Do thresholds save time or reduce frequency of breaks?*

According to the Global Custodian Reconciliation Survey, 80 percent of the funds performing daily reconciliation spend between two and six hours on the task. Listing spreadsheets as the most common tool employed, the survey also indicated that these managers do not consider their output comprehensive enough for their needs. Without all the requisite details, casing the breaks does not include permanent repair of the underlying issue, as effort is spent on matching rather than improvement. Unfortunately, resolution sometimes means chasing non-issues. A common practice to address such breaks is to raise the break tolerance limits. Thresholds set the cutoff level to shield the team from immaterial breaks and the inefficiencies inherent in resolving them.

This table on tolerance monitoring levels for trade, position, and cash thresholds describes ideal thresholds, where only commission, over-the-counter price, and foreign exchange tolerances should be designated as immaterial. All others should have zero tolerance, as time spent on these resolutions is time well spent.

<table>
<thead>
<tr>
<th>Tolerance monitor</th>
<th>Commission</th>
<th>Marginal tolerance</th>
<th>Price - OTC</th>
<th>Marginal tolerance</th>
<th>FX</th>
<th>Marginal tolerance</th>
<th>Nontrade cash</th>
<th>Zero tolerance</th>
<th>Commission</th>
<th>Zero tolerance</th>
<th>Settle cash</th>
<th>Zero tolerance</th>
<th>Cash reconciliation</th>
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Source: Viteos

**Standardization**

Expansion of global capabilities is driving the preference for customized reporting. Underlying this drive is the need for agility — making sure the operation is responsive enough to support the front office whenever and wherever an opportunity arises. With legacy systems and processes, the manual nature of servicing the front office highlights the shortcomings of disparate systems in meeting the need for normalization and the resulting
effect on speed. Operations staffs perform under intense pressure and at a brisk pace; thus, reconciliation may not get the scrutiny it requires as the manager expands. While maintaining the integrity of the reconciliation during growth demands a predisposition for efficiency in a wide range of asset classes and data formats as well as swift processing across systems, the absence of standardized identifiers, data formats, and seamless integration remain the biggest drags on reconciliation.

The non-standardized recording of a broad range of asset classes is one of the greatest drains on productivity. However, in their absence, and with no agreement on standards on the horizon, teams are left to handle these manually.

The portfolio picture
Reporting breaks or matching values from various sources does not mean the data are necessarily correct. It is necessary to understand the fund’s portfolio, strategy, and policies along with current market conditions to uncover the reasons why positions break from prime broker data. If a trade is erroneously recorded in amount or in frequency, the correct picture of positions, profit or loss, and cash will lie somewhere between the onscreen positions and the unreconciled data. Timely break reporting alerts the trader to any position not reflecting all activity until resolution is completed. Reporting of unresolved breaks at the beginning of the day improves control.

Out-of-balance components
Another drag on reconciliation is the imbalance of the process components — data, systems, and people. The output is not usually an issue; it is the imbalance of these components that is the challenge, either daily or when the need for flexibility arises. Although the reconciliation team’s grasp of the steps and the knowledge applied at each step are essential components to quality output, when one component has to support the shortcomings of another, the cost is unsustainable. An imperfect system fed by low-quality data, for example, must have an excellent team able and willing to make up for system deficiencies. This team already delivers a high-quality reconciliation, but at what hidden cost? Burnout, lack of scalability, and reduced timeliness are all potential results.

* Three identification options have emerged. One promoted by the Association of National Numbering Agencies (ANNA) is to rely on a combination of ISINs and the Classification of Financial Instruments code. Another is to use an instrument identifier called the Financial Instrument Global Identifier (FIGI), originally developed for use in proprietary taxonomy. The solution espoused by the International Swaps and Derivatives Association (ISDA) is to depend on its taxonomy, which includes a Unique Product Identifier (UPI) and a Unique Transaction Identifier (UTI).

http://ftnopo.co/regulations/reporting/otc-derivatives-the-identifier-debate-heats-up-in-europe/
Skill and experience
When an excellent framework run by a team of people unfamiliar with certain asset classes and when the data handling produces output without understanding, accuracy and data integrity both suffer. Whenever trades are booked, these nuances will be incorporated into the reconciliation, whether there is a break or not.

Certain fixed income products that pay principal use a factor of 10 or 100 for calculating value. Using a factor of 100 when the factor should be 10 will create a value that is 10 times larger than it should be. A Cyprus bond, for example, always uses a factor of 100. Instead of looking only to see if there is a value in the factor field during reconciliation, the experienced team member will mentally mark that the Cyprus bond factor field should always be 100 and will notice any deviation.

What does a number mean? The value of interpretation
Numbers on a reconciliation or profit-and-loss report are not simply abstract or subjective numbers. Breaks and changes in valuations occur for a variety of reasons, from simple human error to timing issues and from
foreign exchange swings to major economic activity. It takes an experienced eye to distinguish a reasonable break from an unreasonable one; both the magnitude and the rationale of the underlying cause must be taken into account. Understanding all the factors that influence a number helps improve reconciliation and fill gaps in processes, ensuring accuracy through analysis of the origin of the reported number and any adjustments made to it post-trade. Numbers here represent a statement about the real value of an asset, and they affect everything from the fund’s net asset value to the risk of noncompliance because they govern allowable fees, bonuses, commissions, and payouts. They have real and material impact so must be both reliable and timely.

**Relationships between numbers, processes, and information sources**

Market knowledge enables recognition of when a break or a sudden shift in value is reasonable and justifiable or requires additional investigation. Even when a cursory review of results seems to show that market conditions might explain the shift, the team must have the expertise to recognize that the cause might, in fact, be an issue with the underlying processes or information sources.

Making the review of data a function of reconciliation departments with domain competency rather than collection clerks allows every break to be assessed for its “reasonableness” – is the break due to a business process issue or market volatility? Domain expertise enables them to intuitively recognize discrepancies and weigh market conditions, foreign exchange shifts, and realized and unrealized gains and losses, among other factors, to determine a number’s reasonableness.

**Comparative distribution of breaks**

The comparative distribution of breaks assembled over a decade of reconciliation activities serves as a benchmark once a system or process is in place. This distribution guides an experienced team to evaluate the frequency with which breaks occur and compare that to the normal distribution. If the frequency of a certain type of break falls outside the normal frequency, then the team will know that there is inefficiency in the process. The team can improve its ratio by explaining the phenomenon and either recommending repairs or revising the process to accommodate the abnormalities and bring them into alignment.
Comparative distribution of failed trade triggers

Trade

- Trade not booked by fund
- Trade not booked by PB
- Commission breaks & fee
- Factor differences
- FX differences

Source: Viteos

Comparative distribution of position and market value break triggers

Position

- Corporate action
- Trade missing/wrong quantity-fund
- Trade missing/wrong quantity-broker
- Incorrect price
- Timing issue

Source: Viteos

Comparative distribution of cash break triggers

Cash

- Timing differences
- Commission breaks & fee
- Corporate actions
- Nontrade cash entries
- FX differences

Source: Viteos
Robust reporting
A respectable reconciliation will produce detailed, categorized reports describing a path to resolution or other actions. It delivers post-trade position and cash accuracy in support of investment and trading decisions along with accuracy in settlement and charges that support the CFO post-execution. This level of precision insures that no corporate actions are overlooked and that interest, other fees, and accruals are reflected in the fund’s net asset value.

Whether done on trade day (T0) or pre- or post-open the next day (T1), report timing affects trading and operations to varying degrees. A late report may leave the fund exposed to unplanned risk, while an on-time report can serve as an instrument of control. A well-balanced process ensures that each component has the capacity to address a wide range of asset classes, time zones, and spikes in volume. Such a process is also able to adapt all file and data formats with ample time to build mapping tables when automation is possible. If reporting is robust, in those instances when a prime broker’s data is producing breaks or when a trader repeatedly enters erroneous details, the team will be on the alert.

All these considerations are critical to the modern manager and should be scrutinized to ensure that accurate information informs investment decisions when the market opens. For example, in the case of hard-to-borrow securities, without a high level of accuracy, any sale could lead to an excess sale, thus creating borrowing or auction charges. Alternatively, cash shortages reduce a trader’s agility to take a right-sized position if an opportunity arises, thereby increasing the occurrence of lost opportunities. From an investor’s perspective, tight protocols mitigate exposure risk. A solid reconciliation framework not only showcases high-quality operations, it also sets exposure limits for each counterparty and puts the manager in a position to negotiate every call or fee schedule. Independent calculations, along with reconciled commissions, settlements, fees, and margins, keep counterparty exposure at the forefront of risk management. Excess counterparty margins and fees are not uncommon, as these can originate from something as simple as overlooking a revision to the commission schedule. When these are left unverified, a manager may end up paying excess fees.
Modern post-trade operations have always required the smart coordination of people, processes, tools, and information. Given the speed in which our tools and technologies are growing, and with the rise of increasingly specialized investment directions, managers must devote greater amounts of time to systems management and the traffic of data as they might to their core passion of developing savvy answers to investment challenges.

Evaluating operations according to efficiency, scalability, and speed is essential to the work of a manager, as this helps determine the path a manager can take in achieving a higher level of proficiency in the structure of their operations. Central to the modern hedge fund manager’s capability is the smooth stream of information, moving from data alone to a more holistic and integrated view of reconciliation as a process. Outsourcing becomes a comprehensive option and a readily available tool for the manager to employ in pursuit of a more efficient, timely, and reliable flow of data.

If technology is very important in the operations of the modern hedge fund, technology should be transparent and second nature. A strong and effective reconciliation system in the middle and back office enables the manager to do exactly that, allowing for a greater focus on the investment challenges at hand.
About Viteos Fund Services

Tailored for each manager’s specific requirements, our Best Thinking and Best Practices help managers grow. We offer customized straight-through-processing and integrate post-trade operations across virtually every asset class, currency, border, or structure you can imagine. We offer a full range of shadow-accounting, middle- and back-office professional services for investment managers. Our deep operational and accounting expertise backed by state of art technology enables a high degree of control via automation in a 24 hour, 5 days a week global delivery model. The result is a new level of scalability and flexibility to help you grow—whether you’re focused on gathering assets, developing new strategies or entering new markets. Visit www.viteos.com for more information.

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About Viteos Fund Services

Key facts:
- Founded in 2003
- 440+ professionals worldwide
- 24x5 operations
- Daily straight through processing
- $90+ billion under middle-office and fund servicing
- $220 billion in assets serviced
- Serving 60 clients with approximately 800 funds & SMA
- Headquartered in New York / New Jersey
- Branch offices in London, Cayman Islands and Singapore
- Delivery centers in NY Metro and India
- Serving clients in North America, Europe, Far East and Asia Pacific
- Partnered with Credit Suisse
- Audited by Ernst and Young (SSAE16)

Awards & Recognitions
- Global Fund Awards 2015, Global Shadow-Accounting Firm of the Year
- CTA US Services Awards 2015 Best Shadow Accounting Viteos
- HFM European Hedge Fund Services Awards, 2015, Best middle-office services Viteos Fund Services
- Hedge Fund Awards 2015 Best Bespoke Solutions in Hedge Funds
- Finance Monthly, Global Awards 2015, Best Bespoke Solutions in Hedge Funds USA
- ACQ Global Awards 2015 International – Niche HF Services Provider Of The Year (Shadow Accounting)
- Gramercy Strategy Awards 2015 Accounting
- 2014 Global Custodian Awards for Excellence, Regulatory Solution
- HFM European Hedge Fund Services Awards, 2014, Best middle-office services Viteos Fund Services
- HFM Awards 2012 Best Administrator – under $30bn overall
- HFM Awards 2011 Best Administrator – reporting services