Financial Risk Control

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Abstract: Financial markets are trading places for financial commodities and securities. A financial market is a market, or an arrangement or an institution that facilitates the exchange of financial instruments and securities. These instruments include shares, stocks, bonds, debentures, commercial papers, bills, cheques etc. The price of these instruments is determined by the laws of demand and supply in the market. There are broadly two types of financial markets in an economy – capital market and money market. Now capital market deals in financial instruments and commodities that are of long-term securities. They have a maturity of at least more than one year. Capital markets perform the same functions as the money market. It provides a link between the savings/investors and the wealth creators. The funds will be used for productive purposes and create wealth in the economy in the long term. One of the important functions of the capital markets is to provide ease of transactions for both the investors and the companies. Both parties should be able to find each other with ease and the legal aspect of things should go smoothly.

Reconciliation is the process of comparing transactions you have recorded with the data stored in the database. This involves the concept of intraday trading. Intraday trading is nothing but the trades are placed throughout the day by various counterparties, brokers, etc. In the intraday trading, trades can only be placed during a specific time, commonly known, as cut off time.

The data sent from the front end should reconcile with the backend processing to generate the trading general ledger. This value reflects on the profit/loss accounts of the ledger. In financial accounting, if the amount does not reconcile, business has to do manual corrections at every month end. This involves huge amount of human resources.
intervention to correct erroneous data. This is a very big risk in financial accounting to involve manual corrections at month end.

A small error can lead to a huge loss to the organization. Also the data maintained in the ledger is used by different downstream system for their different financial accounting process. So the accounting in the trading general ledger should be done in a correct fashion.

### III. Literature Review

The architecture needs to be implemented in such a way that front end trade data should reconcile with backend data. A single trade hub needs to be implemented to contain all the in-depth details of the trade. The source data comes from the various sources. These are the cash flows which need to be bifurcated and maintained in the database. Postings are the actual values of on which buy/sell has taken place on the trade. It depicts the amount of trades bought/sold by a customer on which trading book at what rate. Based on the postings, balances need to be generated. Balances are the result of previous balances and today’s postings on the trade. Thus the ledger needs to be appropriately maintained so that the profit and loss figure will be precise at back end and will match with the trading information received from the front end.

### IV. Implementation logic

To create this module, technologies like java, oracle pl/sql, data stage, webservicess needs to be taken into consideration. A single trade hub can be created to store trade level information like trade date, settlement date, customer name, portfolio name, etc. The cash flow information can be maintained separately stating the source level information of the trade. Once we have the trade level and cash flow information, postings can be generated. Postings can involve various events like:

- **Mark to market value (MTM):** This postings needs to be generated till the settlement date. It means that till the trade is settled, the valuation on the trade may vary.
- **Settlement postings:** These needs to be created on the day the trade is matured.
- **Cost of carry (COC):** This is the cost required to carry the particular instrument/product.
- **Accrual:** The accrued value/interest on any trade.

Postings can be realized or unrealized based on the type of cashflows received from sources. Realized postings will be generated on the settlement date of the trade whereas unrealized postings will be generated from trade date to settlement date. Once the postings are generated, balances needs to be generated for the current day. Balances will maintain the profit/loss information based on the holdings of the customer. Separate accounts will be mentioned in the balance sheet depending on the type of the events on the trade. Example: MTM account, COC account, Premium account.

The profit and loss account is accountable for the balances on customer account in the ledger. The entire logic needs to be developed in such a way that the system is fully automated with no manual intervention.
V. Proposed module:

Figure 1: Automated Reconciliation Process

The trades are placed from the front end which can be stored in the system using java, webservices, etc. This information needs to be stored in the trade hub at the backend. Trade hub is the place wherein all the in-depth details of the trades need to be maintained. This trade hub should be accessible by all the downstream systems. Various source systems can send the cash flows for the trades being placed.

Cash flows are nothing but some events which will occur on the trade till maturity date of the trade. This information needs to be maintained in the cashflow table in the database. Post receipt of cash flows, postings and balances can be created on the trades being placed. Separate post and balances tables need to be maintained in the database. The structure of these tables should be built up in a way that all the historic data can be maintained.

All this can be done by creating various types of triggers, functions, procedures, etc., using oracle pl/sql technology. Data stage can serve as a middleware for bridging the data from front end and backend. All the optimal techniques need to be used for developing this logic so that there is no lag in the performance. This entire process needs to be automated by creating scheduler jobs running at pre-defined intervals. This scheduler jobs which are responsible for generating accurate postings and balances in the general ledger. Using these jobs, we can easily match up the front end and backend values.

By automating the entire process, manual intervention will not be required at any point in time.

This will definitely reduce huge manual power involved from business correcting the inaccurate profit/loss figures in the trading general ledger. Once the correct postings and balances are generated, this data can be consumed by any other downstream systems for their different financial use.

VI. Conclusion

By this implementation, the financial risk will definitely be reduced as the entire reconciliation process will be automated. The balance sheet ledger will reconcile correctly with the trading information from front end and backend leading to reduction in manual intervention and accurate information on profit/loss information.
References

[1]. https://www.accountingdepartment.com/blog/bid/333258/3-Reasons-General-Ledger-Reconciliation-Is-Important
[6]. https://apps2fusion.com/apps/fm/468-how-to-close-r12-period