

Structured Products Using EDM To Manage Risk

Executive Summary

The marketplace for financial products has become increasingly complex and fast-moving, due to increased globalization and intense competition between financial services providers seeking to deliver innovative products to customers. At the same time trade volumes for complex structured financial products have undergone explosive growth in recent years.

Derivatives traded Over-The-Counter (OTC) lack transparency and can contain significant unknown risks. Financial institutions cannot easily generate or maintain referential data for such derivatives, particularly since most have built up a tangle of back-office systems, each highly tailored to the specific requirements of a single product and offering very little flexibility.

To successfully manage the new generation of complex structured financial products, financial institutions need to be able to gain a clear view of all the facts associated with a product: instruments, customers, counterparties, trades, positions - with a full understanding of how these facts are linked.

Enterprise Data Management (EDM) provides a rich global financial data model with a high degree of flexibility, enabling financial institutions to create and manage complex financial instruments and understand all the relationships they encapsulate. With instant roll-up or drill-

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through from any perspective, EDM provides complete and accurate information on the exposure on any instrument. It also enables real-time insight into profitability, and supports low-cost operations by automating many data management tasks.

By implementing an EDM solution, financial institutions can bring new structured products to market faster, manage them more profitably, and clearly understand and mitigate the potentially significant risks.

Market Drivers

The growth of the OTC derivatives markets in the last ten years is well documented with the value of notional value of contracts growing from less than US\$100 trillion more than 10 years ago to well in excess of US\$560 trillion by the end of 2007 according to statistics released by the Bank of International Settlements (BIS) released in its semi-annual market survey in May.

From the perspective of sell side institutions, the natural opacity and lack of price liquidity of the OTC market allows high margins for the ever increasing complexity of products while enabling them to provide significant value add in the execution of OTC trades.

For mainstream buy side firms, drivers have included liability matching for pension funds in the wake of legislation following the equity market collapse between 2001 and 2004 which drove them towards the bond and swaps markets to meet the demand for capital protected products from wary retail investors. Tighter regulation of sales channels and the general maturity of derivatives markets have also supported the introduction of UCITS

III allowing managed funds to take limited derivatives positions and short selling.

The growth of the hedge fund industry in recent years has also significantly increased demand and product innovation as their freedom of investment strategy drives both hedging and geared speculation.

With Growth Comes Complexity

At the beginning of the derivatives boom, almost all financial institutions modeled their operations and systems as multiple stand-alone asset-class by asset-class business units -- one group managed swap derivative contracts, another group managed equity derivative contracts, a third group managed currency derivative contracts, and so on. For many institutions, this legacy "siloes" infrastructure is still in operation, but remains inflexible. It hinders the sharing of essential and trustworthy data and is not conducive to the cross-asset approach needed today by financial institutions.

The OTC derivatives market is exposed to a wide range of different type of risks, including:

- Counterparty
- Credit
- Market
- Settlement
- Liquidity
- Legal
- Aggregation
- Operating

Risks relating to the underlying assets, also need to be taken into account. When OTC support systems are fragmented, the potential for costly errors and manual reconciliations

is compounded. The disparate siloed systems consisting of thousands of disjointed pieces of data on securities, transactions, positions, attributes, and related-events cannot share data. This lack of interaction between systems puts the firm at risk for significant financial and operational exposure.

The risk management system handling derivatives is only one of a handful of systems where exposure is evident and operational risks are on the increase. Regulators have become acutely aware of the nature of the risks and are pressuring firms to better manage their risks.

This is a key driver for financial institutions to increase investments and operations in OTC derivatives processing and adopting a more integrated approach. Legacy systems and processes are being transformed to more efficiently provide a cross-asset solution for many business units. This is known as enterprise data management, and is comprised of all the critical data of every customer, security, position, and transaction that enables a financial institution to process all asset-types workflows in their back, middle, and front offices.

Dealing With Rapid Growth

Financial institutions operating in the derivatives markets share the same key strategic goals: higher speed-to-market, better risk management, lower transaction costs and improved operational transparency, without introducing risk.

Both the variety and the traded volumes of complex structured financial products are growing rapidly. The market is becoming increasingly complex, globalized, innovative and fast-moving.

Growth of OTC Derivatives

The growth in currency and interest rate swaps over the last 25 years is huge.

1982	\$5 billion
1984	\$45 billion
1986	\$430 billion
1992	\$4 trillion
2006	\$415 trillion
2007	\$560 trillion

According to Market Survey statistics produced by the Bank of International Settlements (BIS).

Many institutions are largely unprepared for the pace of change and innovation in the current market. The historical need to maintain speed-to-market at virtually any cost has left institutions with a bewildering tangle of specialized systems. These systems - each chosen as the fastest way to respond to the latest trend in the market, with no thought of how they might integrate with other systems - lack the flexibility to deal with the next generation of financial instruments that can cut across traditional silos of equities, fixed income, FX or commodities.

So What's The Problem?

The most significant difference between the buying holding and selling of securities and OTC derivatives is the introduction of counterparty credit risk in addition to the market risk of the underlying securities. Furthermore, the operational overhead in terms of affirming, confirming, marking to market,

calling or posting collateral, scheduled fixings, payments and corporate actions of potential changes in the underlyings of a trade that may be open for years is enormous.

All of the above operational processes require up to date unambiguous reference data. For example: a bank has a client with holdings in a leading pharmaceutical with a long term view but wants to

hedge against medium term outperformance by its peers (or even a corporate hedging its own performance). The bank puts together a total return swap for a nominal value of the reference asset against a weighted basket of the three best performing stocks from a list of competitors. Both parties will then have to maintain the following data:

- Party A entity, branch and booking location
- Party B entity, branch and booking location, credit rating
- Product definition including mapping to legal product definitions for reference to confirmation, netting and collateral contracts
- Nominal value plus any fees margins and haircuts
- All underlying securities, issuers, ID's, prices dividends etc.
- Mark to market values for both legs
- Posted or received collateral including cost of collateral
- Fixing dates and payment details
- Links to any hedges such as a put on the reference asset

If any of the data is wrong or incomplete there is the immediate risk that the trade either cannot be legally confirmed or that it

is confirmed wrongly which then spills over into problems with portfolio matching, netting, margining and settling of trades with that counterparty. Failed and disputed trades and

volume constraints caused by operational inefficiencies are lost business opportunities.

On a wider level, each party needs to aggregate this data with all its other trades in order to calculate its

true exposure to the counterparty, underlying securities and their issuers. Inability to measure credit risk and audit all data processes contributing to its calculation is extremely costly under Basel II and SOX.

The above example is fairly simple with straightforward equity underlying assets. As products become increasingly complex they often cross boundaries between traditional divisions such as equities, fixed income, FX or commodities. Add to this the counterparty tracking issues thrown up by agency and 'Give Up' agreements and the collation of data required to accurately measure and report risk becomes an even more onerous task.

Nearly all OTC trade documentation also defines additional termination events beyond default on the trade itself such as material change of ownership, ratings downgrade or default on other securities issued by the counterparty or any of its affiliated companies. To truly manage the risk this should also be linked to the trade.

Exposed To Unknown Risks

Single-box solutions for structured products may solve the immediate time-to-market

When OTC support systems are fragmented, the potential for costly errors and manual reconciliations is compounded.

problem in each individual case, but it also stores up trouble for the future.

From a purely operational point of view, the tendency to implement a new point solution for each new requirement has left traders with a set of incompatible and inflexible management tools that are no longer capable of responding to the demands of a global market for innovation. From a strategic point of view, the lack of coherence not only translates into higher cost of sales, but - more importantly - makes it all but impossible to accurately assess risk and manage P&L at the level of the entire enterprise.

Investors use derivative products (whether OTC or exchange-traded) either for hedging or speculation. Derivatives that trade on an exchange are transparent, since mark-to-market data can be generated from the daily trading of these products and there is no perceived counterparty risk. This can be stored as referential data then used for operations, trading, and analytics and so on.

By contrast, OTC derivatives are not transparent, and institutions cannot easily maintain accurate reference data for them. With no clear view across many siloed systems, the individual desk using a solution may be happy, but the institution will be significantly exposed to unknown risk. To successfully mitigate the risks of the latest generation of complex structured products, financial institutions need to be able to see all the facts: instruments, customers, counterparties, trades, positions - and to understand how they are linked

Gaining A Clear View

Structured products are designed to provide highly tailored hedges or synthetic exposure

for both the market-maker and the client, and as such they tend to be both complex and bespoke. The institution as a whole needs to be able to understand all the relevant information around a particular instrument:

- When and where is this instrument settling?
- What exposures do we have?
- What is the credit rating of all the paper?
- Who is the issuer?
- Who is customer?
- What is our position?
- Who are the transaction partners?

To enable a sufficiently rapid and low-risk response to the challenges of managing complex structured products, institutions need fit-for-purpose systems based on a centralized, comprehensive financial model that is adaptable to new requirements and that supports very high speed-to-market.

EDM is based on the creation and maintenance of a trusted golden copy of data, which includes wrappers that define and provide context for that data. An EDM solution enables institutions to immediately see the connections between all the categories of data it controls, allowing rapid and accurate assessments of risk and profitability for even the most complex products.

EDM has been widely adopted for vanilla financial products; the richness and flexibility of a global financial data model also make it ideally suited to the management of dynamic and complex derivatives with unequivocal links to their underlying securities. With an EDM solution in place, institutions can rapidly model new structured products and all of their complex interdependent relationships, delivering both speed-to-market and a clear view of risk.

The sophistication of an EDM data model enables it to support high-speed operations involving bespoke structured products while continuing to deliver a clear top-level strategic view. EDM enables the institution to know all the facts about any structured product, and provides the ability to roll up or drill through the data from any perspective to see the potential risk and P&L.

EDM is not just about strategic benefits. It delivers considerable operational benefits, supporting rapid time-to-market by automating many data management tasks. With built-in validation and alerts, EDM can reduce the administrative burden on trading staff and enable them to work more effectively on higher-value functions. Much of the often reported operational failures of failed, disputed and double keyed trades in OTC are the result of poor or missing reference data.

The ability to trade quickly coupled with the growth of options and other derivative instruments developed to meet investors' needs means the world of investments is more risky and more complex.

Speed-to-Market with Low Risk

A well-implemented EDM strategy aims to deliver the right data at the right time for the right business purposes. To do so, it needs to be based on a robust, fit-for-purpose financial data model that can support 24-hour, follow-the-sun operational capabilities. With a rich and extendable global financial model at its heart, Golden-Source EDM solutions offer the flexibility to trade a new instrument, structure or derivative quickly and easily, with a minimum of modeling work.

By improving transparency and enabling real-time roll-up of the position, EDM can significantly improve risk management. Building a new product - no matter how exotic - on a capable EDM platform immediately enables an institution to see all of the underlying links and dependencies, and to understand the credit risk across all components and counterparties for a particular

product. EDM can also readily provide detailed insight into the profitability associated with any customer or instrument.

In operational terms, EDM significantly reduces the cost of developing and managing complex instruments that may only ever be traded once. This

enables new flexibility in terms of being able to give the market precisely what it wants to buy at any given moment. By lowering the barriers to entry for bringing complex products to market, EDM can open up significant new commercial opportunities for market-makers.

The increased quality and consistency of data managed in an EDM solution enables institutions to know exactly what they are holding, who the trading partners are, and what the positions are in terms of mark-to-market.

This new confidence in the data, together with a single view point and the ability to drill up and down, enables better strategic planning and performance reviews. Finally, with the automation of routine data management tasks, and built-in, rules-based exception control, users will benefit from reduced administrative workload and improved confidence in the quality of the underlying data.

Conclusion

Managing exotic structured products using a patchwork of legacy systems, point solutions and unstructured spreadsheets is unsustainable. The latest generation of structured financial products is increasingly complex and the market is moving ever faster; traditional approaches to management are both too unwieldy to support fast time-to-market, and too opaque to reduce risk to tolerable levels. Correct use of EDM cuts time-to-market for complex structured products, increases clarity, reduces exposure to risk, saves time and money in operations, and improves the global consistency of data.

EDM provides a rich global financial data model with a high degree of flexibility,

enabling financial institutions to create and manage complex financial instruments and understand all the relationships they encapsulate. With instant roll-up or drill-through from any perspective, EDM provides complete and accurate information on the exposure on any instrument, providing real-time insight into profitability, while automating many data management tasks and reducing costs.

For more information on how EDM can increase the profitability and reduce the risks of complex structured products visit:

www.360edm.com

About GoldenSource

GoldenSource delivers an integrated 360 EDM™ platform for the securities and investment management industry. GoldenSource makes it easy to manage critical reference and market data with Enterprise Data Management (EDM).

Our innovative products create, maintain and distribute a trusted golden copy starting with the industry leading data model which covers all financial instruments, customers and counterparties, and extends to transactions and positions. The ability to connect, organize and aggregate trusted information helps our customers to achieve their business goals by reducing risk and enabling better decisions making. GoldenSource solutions are used by forward-looking banks, brokers, investment

managers, service providers, and exchanges to reconcile tactical departmental goals and strategic enterprise objectives.

A proven supplier of on-premise EDM solutions to the world's largest financial institutions, GoldenSource also delivers managed data services via the innovative *Powered by GoldenSource™* program.

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