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Derivative Trade and Risk Management Systems

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Closed-form derivative trading platforms and imbedded risk management procedures are crucial to help mitigate the risk of destroying value through poor transaction processes. Unfortunately many derivative trading platforms are “open form” systems using various spreadsheets, VBA programs, C++ programs, and other applications. These applications are designed into processes which are typically not “locked-down” in a stable production environment. Technology professionals and auditors often cringe with fear knowing that these applications are ripe for errors or unapproved changes that can alter the integrity of the trade and derivative risk management process.

This article discusses the benefits of a closed form trading system and concludes with recommendations for a sound derivative trade and risk management system. However, before you read this article we suggest you read the first two articles in this three part series entitled *Establishing Comprehensive Derivative Policies and Guidelines* and *Minimizing the Risk of Over-The-Counter (OTC) Derivatives*. This series of articles provides insights for establishing solid procedures, strong oversight controls, impenetrable trade systems, and timely reporting of derivative trading.

Closing the Gaps – Closed Form Trading System

Most “open form” applications and processes have several weaknesses:

- They may be freely accessible to many individuals inside and outside the derivative trading team who could inadvertently make changes.
- The data entry processes may have little to no error checking.
- There may be a manual trade process in place which requires data entry in an exact sequence into a series of spreadsheets and programs to piece together the entire trade process.
- Perhaps of greatest concern, open form systems may not be directly tied to the detailed specifications and prescribed controls of the derivative policy/guidelines. There is a general lack of audit-trail and accountability.

Clearly, open form systems present risks to any firm trading derivatives. The potential for mistakes or misjudgments are present at many turns thus creating the possibility of large risks to a company.

Ultimately, it is the company that bears the financial impact of problems. These problems can, and have, destroyed companies in scenarios even less than worst case. Oftentimes, this is directly the result of poorly designed, created, and implemented derivative risk management policies and processes. The investment committee of the board is typically charged with oversight of derivative management. However, they often extend oversight control to the perceived experts in the firm. This approach is workable if solid policies are in place with systems designed to integrate directly with the derivative

management policy. In the end the investment oversight committee of the board must feel the utmost confidence that derivative trading and risk management is being handled correctly. To this end various internal and external oversight is needed, including internal audit activities to minimize risk exposures. Colleagues can and should trust each other but solid derivative processes must be in place to prevent and detect errors and risks outside of the firm's tolerance.

A Better Approach – Closed Form Derivative Trading and Risk Management Systems

Closed-form derivative systems are a better approach. They exist in a protected environment secure from changes unless approved and fully tested. The system is guided by the derivative policy parameters. The related controls, corrective measures, procedures, extensive reporting and risk analysis metrics of the derivative positions are all components of the system. The system could be an off-the-shelf vendor product; however, it must be flexible enough to allow the derivative policy and related elements of the policy, procedures, and reporting to be incorporated. Some vendors have systems which are quite comprehensive as well as flexible enough to integrate the policy parameters. Comprehensive and flexible vendor systems come at a cost which a firm must assess.

A closed form system can actually be custom built using many of the open form architecture components already in place. To proceed requires engaging talented IT experts, compliance experts and derivative experts to review the current components. Oftentimes it is warranted to reconstruct the modules and programs to meet the specified details of the policy thus ensuring that the components are easily modifiable and functionally designed. This includes;

- Extensive error checking controls
- Streamlining the front-to-back flow of the process
- Clearly documenting the processes in each step
- Protecting the system in a secure environment

These combined endeavors are a solid investment in derivative risk management.

Article Summary

All competent business activities involve entrusting procedures to skilled and trusted staff. While no process can be completely automated as human judgment and interaction must enter at some point, it is important to have the right technology to leverage upon. In the realm of derivative trading, strict processes and controls are needed given the frequent high financial impact of mismanagement. A well constructed and approved derivative policy integrated into the design and use of a derivate trade and risk management system will likely reduce the "stress" of all involved. This comfort level and reduction of potential risks arises as the derivative staff utilizes a process much less fraught with the potential for critical errors. Unfortunately, many firms use open form derivative trade processes that can trigger excessive risks. These firms have open form systems simply viewed as too expensive to take corrective action. These organizations view the trade-off of risk as "bearable". This is often flawed logic as rebuilding a better process may not be as expensive as one may think, especially when compared against the risks of not refining their derivative trading and risk management processes.

Series Summary - The Key Elements of a Derivative Trade and Risk Management System

Here are some recommendations to help ensure a derivative trade and risk management system:

1. Create a well constructed and all encompassing derivative management policy approved by an oversight board/committee. The investment oversight committee of the board must have the highest confidence in what they have approved. Input to the policy is provided by the in-house derivative experts, as well as internal and external oversight groups.

2. Utilize a closed form derivative management system that directly embodies the aspects of the approved derivative management policy.

3. Design a derivative management system to generate the prescribed reports, metrics, and exhaustive scenario analysis. This will allow the firm and derivative management team to fully understand potential and actual risks via a broad range of scenario analysis and the associated financial impacts.

4. Negotiate OTC derivatives contracts in a manner to reduce risks such that they replicate very closely the aspects of exchange-traded instruments.

5. Implement a closed form derivative system in a protected environment free from inadvertent code changes. This helps to ensure that a smooth trade process is in place so no vital steps are missed which would be out of sync with the policy and associated trading parameters.

6. Provide for an on-going process of oversight and review, with a management view towards the evolution of the derivative trade and risk management process through time to enhance and optimize all components.

We hoped you have enjoyed this series of articles on derivatives.

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