



**Services for the
Asset Management
&
Securities Industries**

Introduction

Pressured by lower margins, fluctuating trade volumes, reduced commissions, increased competition, legal challenges, heightened regulations, and attracted by new market opportunities, the Securities Industry is trying to reinvent itself. A recent survey by Deloitte has stated that Investment banking and securities firms have always dealt with volatile and uncertain markets, but in many respects the management challenge posed by the business and market environment of 2003 looks as daunting as any the industry has seen for a generation or more.

We present in this paper some of the main business & technology challenges of the securities & investment management firms in 2003 and SeE Consulting' technology services to address these issues.

Recent changes in the securities industries market

The challenges that many securities firms across the globe are facing today, are born out of five central themes

- The essential elements of integrity and professionalism
- Developing & Marketing new products & services
- Improving Infrastructure in line with technology advances
- Convergence to global regulatory standards
- Focus on critical nerve centres for improved operational & market efficiencies- Risk Management / t +1 settlement

While the first three challenges are from a strategic & marketing point of view the rest two have a direct impact on the technology. We would hence focus on addressing the technical challenges & solutions therein. One has to note that none of the above challenges can be viewed in isolation. For example the root of convergence to global regulatory standards is the issue of integrity & professionalism & similarly any introduction of new products & service will have to be in line with the technical infrastructure to enable efficient service.

Convergence to global regulatory standards

The desire for convergence of accounting standards is greater than ever. The convergence aspires to, ultimately, all standard setters agreeing on a single set of high quality accounting standards applied even-handedly. This will greatly reduce uncertainty about comparability of published accounts, and greatly enhance the transparency of information to the market place.

The following section describes two special standards of IAS – IAS 39 & IAS 32 that are likely to have the most significant impact among the other standards

IAS 39 - Financial Instruments: Recognition and Measurement

When performing an initial impact assessment of IAS on the business, it becomes apparent that these IAS requirements & standards are quite different from most other accounting regimes. These standards, and especially IAS 39, are likely to have the greatest impact on groups with substantial corporate treasury activities that use derivatives in their overall risk management strategies and those groups with substantial commodities trading activities:

1. Under IAS 39 all financial instruments (exceptions such as receivables or loans generated by the companies) including derivatives must be recognised on the balance sheet at their fair value with changes in fair value taken through the income statement each period.

This is significantly different from previous practice, which generally involved treating derivatives as off balance sheet items with accruals made only for current gains or losses

2. IAS 39 introduces strict criteria that must be met in order to allow special hedge accounting for all types of hedge transactions including foreign currency and interest rate hedges as well as commodity hedges. Companies may hedge the fair value of assets and liabilities or the variability in cash flows from future transactions. The criteria include requirements for documentation upon inception and testing the effectiveness of the hedge on a periodic basis.

Key Technical Issues therein

The impact of IAS 39 on information systems is going to be very significant, at most levels: back office, accounting systems and front office in certain cases.

1. Accounting for financial instruments will involve complex issues from a technical perspective. One of the basic requirements of IAS 39 as stated above that is different from the old accounting standard is that all hedging instruments must be marked to market
2. IAS 39 also says that a firm must have a policy on why it hedges and what it hedges, and one must document every hedge it does. Obviously there needs to be a system that continually checks that it is still an effective and compliant hedge
3. The close monitoring of hedges will require the “efficiency” of all hedges to be automatically calculated by systems
4. Research proves that many firm rely on spreadsheets for treasury functions, and a sizable chunk do not use a system of any kind. This means that companies will have to either move to a specialist treasury system or activate the module of a system they may already have
5. The inclusion of external transaction costs in the initial measurement of assets and liabilities will require back office systems to obtain the cost data, which is often recorded in separate systems

6. The use of the effective interest rate for debt instruments accounted for at amortized cost or as Assets Available for Sale, as well as the discounted cash flow approach for loan loss impairment calculations, will also imply significant modifications of current systems
7. The component approach that is pervasive throughout the standard (extraction of embedded derivatives, separation of compound instruments between debt and equity instruments, hedging of risk components, partial de-recognition) will require systems to be able to split the different components that will be separately accounted for and to keep the links between components

IAS 32 - Disclosure and Presentation

For many companies, the impact of IAS on investor relations will be considerable. Not only will the increased transparency provide the markets with substantially more insight into European companies, but companies will also have to rethink the ways in which they measure performance and communicate with the markets. This is because the adoption of IAS will have a fundamental impact on a number of important areas of financial reporting. The IAS requirement also presents a unique opportunity for companies to transform management reporting systems in order to:

- Generate the information required by IAS quickly and efficiently.
- Align internal reporting with the data used by the market to monitor and evaluate business performance.
- Measure executive performance using the same metrics used by the market, and structure effective performance-related compensation programs.
- Enhance communications with investors and finance sources.
- Plan & execute both 'quick fixes' and major system modifications to enable IAS reporting

Although the major application packages have - by design or default - the functionality to handle the requirements of IAS, it is critical how people use their systems and set up their parameters in line with the reporting requirements. We believe that the system has to be able to run with parallel valuations since companies have to provide reporting for different purposes

In addition, given that IAS affects the whole company, not just accounts, it is another compelling reason for banks & Financial Institutions without an enterprise resource planning (ERP) system to implement one rather than rely on a mish-mash of less formal or stand-alone systems

The following are some of the major IT challenges that an organization has to go through to adhere to for reporting purposes:

- Upgrading both the content of accounting policies and procedures in relation to IAS and the way to deliver that content to the desktops of the hundreds of finance professionals within the company
- Restructure its databases and make them more efficient for reporting purposes
- Alignment of the management reporting and our external reporting systems to get speedier processing and have the business working to a common tool

It is imperative that a bank & FI will have to undergo significant changes to meet the IAS requirements & the implementation of the new set of standards is considered by most affected IT departments to be the third largest project with “preset deadline” after the Euro and Y2K. It is the Bank’s expectation that, in a practical sense, the migration to IAS in itself is for many banks going to be a major project at the company level.

Underestimation of the efforts in terms of both capacity (staff, training and resources) and timeframe must be avoided to the extent possible. Most institutions will by now have a (broad) awareness of the issues involved. Where this has not been the case, however, assuming the timeframe will be retained, it is now imperative that the preparatory measures of analysis and planning be instigated without delay. SeE Consulting

SeE Consulting’s Implementation Strategy

Operations of Financial Institutions involve dealing with multiple systems and applications and thus with differing business formats, technologies, processes and requirements. Such an environment often implies specific processes and designs that are dependent on a given infrastructure at a certain time, thereby causing you to review processes frequently to accommodate changes in the underlying systems. In reality however, processes should not be subject to these changes. They should in fact drive them.

Though SeE Consulting has the system components, knowledge & tools to meet the challenges hovering because of the IAS regulations, we should admit that any IAS preparedness couldn’t be accomplished in isolation. We believe in the philosophy of co-authoring which means working together with you to achieve the goal

Together our IAS conversion team should include resources knowledgeable in financial instrument issues. Depending on the size and complexity of activities, a separate project team for the IAS 39 conversion may be advisable. Regardless of the structure of the project, in order to have a successful implementation, together we must make sure that enough time and qualified resources are available to address these issues. In some cases for implementation of IAS 39 we may need expertise and judgment for those instruments that do not have a ready market quotation.

The ultimate goal is to share business information among business systems in order to streamline operations, reduce costs and enable new functionalities. SeE consulting has fully recognized the need for professional competences in that Enterprise Application

Integration (EAI) domain, both at consulting and implementation level, thus providing a leverage of connectivity and functionalities across systems

Real Time Risk Management & T+1 Settlement

The flow of information to the investment community is virtually instantaneous. Capturing the information in a timely manner is critical to making investment decisions in this volatile market place. Recent world events have demonstrated the need to react with opportune evaluations and real time risk management has become a driving force in the decision-making process. It was always a matter of time before financial institutions started offering clients full-blown, Internet-based risk management services.

SeE Consulting's Risk Management solution is focussed towards acting as a repository for all the different components of the risk positions that should be managed covering broadly all major financial instruments. With an inbuilt feature of Decision Support System our Risk Management tool communicates desired risk and return targets and guidelines to those carrying out market operations. This is done using a combination of internal or external benchmarks, together with position limits.

Another significant challenge faced by the financial firms is the issues concerning the changes to T+1 settlement. SeE consulting has developed a framework to address this critical challenge and the strategy encompasses a thorough study of the existing systems, identifying and performing the gap analysis to designing and implementation of a T+1 environment. SeE Consulting's implementation framework includes:

- Identifying and documenting the building blocks necessary to achieve a T+1 settlement cycle
- Evaluating the current processes and systems and the desired goals
- Performing Gap Analysis
- Producing a Business Requirement Document
- Identifying T+1 settlement infrastructure and architecture, system components and flows, and producing a Business System Design Document
- Providing project management, analysis, programming, testing, and documentation resources.

With the second Basel capital accord on the horizon, regulators stand poised to embrace the culture of risk management in new ways. It is the result of the unprecedented speed of change related to technological, the unpredictable financial market, the ubiquitous and global nature of open electronic networks and the integration of web-based applications with legacy computer systems.

The main change in the Basel II accord, compared to previous capital adequacy regulations, is the option for banks to use their own internal market risk management

models, i.e. value-at-risk (VaR) models from which their regulatory minimum capital against trading book losses is determined.

Traditional approaches to managing credit risk deliver neither the insight nor the agility demanded by emerging complex credit environments. The challenges to match information content, detail, format, mode, and periodicity to decision support needs and knowledge of potential users is what makes a complete risk calculation model in the modern era more complex.

SeE Consulting has built a component for calculation of Value at Risk (VaR) using the Monte Carlo simulation approach. This component is targeted for those investment management & asset management firms who perform stress tests. Monte Carlo simulation has the advantage that the parameterized history is significantly easier to modify (e.g., a 10% decline in the S&P with all other risks moving based on their historical correlation to the S&P) than the actual price and rate histories used in historical simulation.

Our component is most helpful when some or all assets in a portfolio are not amenable to analytical treatment. The procedure, which is computationally very intensive, is made simple and highly useful by our component as it gives the distribution of the portfolio returns. This distribution can then be used to study the non-normality of the distribution, the spread of the returns etc. In general this methodology provides more information than just a single number for the VaR.

The following 3 are the basic steps that the components performs:

1. Scenario Generation -produce a large number of future price scenarios
2. Portfolio valuation - for each scenario compute a portfolio value
3. Summary - report the results of the simulation, either as a portfolio distribution or as a particular risk measure

Integration of VaR calculator to the internal IT Systems – Approach Methodology

The component is implemented in C++, as these simulations are very resource intensive. A bi-directional adapter was built to connect this simulator with the backend IT system. This adapter was built using sockets, where simulator end was developed on C++

This could have been built by directly accessing the IT system using ODBC, but this could not have been a scalable and extendable solution.

Our approach also provides the benefit of remoteness. As in our case simulator and IT system could be in two different locations also. Other major advantage is that IT system end can be modified without affecting the simulator end and can be modified to work with any IT system.