

# Société Générale

## Summary of PwC diagnostic review and analysis of the action plan

23 May 2008

The English language version of this document is a translation from the original which was prepared in French. Care has been taken to ensure that the translation is an accurate presentation of the original. However, in all matters of interpretation, views or opinions expressed in the original language version of the document in French take precedence over the translation.

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## SOCIETE GENERALE

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Neuilly-sur-Seine, 23 May 2008

Dear Sirs,

In accordance with the assignment entrusted to us, please find hereafter our report.

### Background

Following the Fraud<sup>1</sup> of which Société Générale was a victim, the Board of Directors decided, at their meeting of 30 January 2008, to form a Special Committee composed exclusively of three independent directors. The Board of Directors instructed the Committee to ensure:

*"(i) that the causes and sizes of the trading losses announced by the bank have been completely identified;*

*(ii) that measures have been, or will be, put in place to prevent the reoccurrence of incidents of the same nature;*

*(iii) that the information communicated by the bank faithfully reflects the findings of the inquiry; and*

*(iv) that the management of the situation is conducted in the best interests of the company, its shareholders, its clients, and its employees."*

On 24 January 2008, prior to the creation of this Committee, the bank's General Inspection department was given the responsibility of performing an investigation.

On 20 February 2008, the General Inspection department presented a summary of its interim conclusions to the Special Committee. The Special Committee decided to adopt the interim conclusions of the General Inspection department's report which were published<sup>2</sup> on the same day.

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<sup>1</sup> Activities of Jérôme Kerviel, which consisted of taking and concealing speculative positions on index futures and equities, and concealing the results realised on these positions.

<sup>2</sup> This document is available on Société Générale's corporate website.

## Objectives of our assignment

Our role consisted of assisting the Special Committee where required and when requested. The assignment was organised in two main stages, involving:

- a diagnostic review of the weaknesses of the internal control system which allowed the Fraud to occur, to be based primarily on the work carried out by the General Inspection department (“the Diagnostic review”);
- a critical review of the plan of remediation measures prepared by Société Générale in the wake of the Fraud.

The structure of the report which has been provided to the Special Committee reflects these two stages of our work.

The principal phases of our work were as follows:

- we familiarised ourselves with the results of the work undertaken by the General Inspection department in order to identify the mechanisms of the Fraud and the weaknesses in internal control which allowed the Fraud to occur. In addition to the interim and final conclusions issued on 20 February 2008 and 20 May 2008 respectively, the General Inspection department provided us with copies of the various working papers which support their conclusions;
- on the basis of this information, we conducted a diagnostic review of the causes of the Fraud and the circumstances in which it took place;
- with regard to remediation activities, we reviewed the design and implementation of the various plans (or the manner in which it was envisaged that they would be implemented) together with the underlying documentation;
- we carried out a critical review of the detailed action plans for the various remediation initiatives. Where appropriate, we tested the accuracy of the information contained in the management information dashboards used to monitor the status of the implementation of the various actions.

The scope of our work in respect of the remediation activities covered the capital markets operations of Société Générale Corporate & Investment Banking (“SG CIB<sup>1</sup>”) and the functional departments of the Société Générale group. These included the risk management department and functions reporting to the General Secretariat (“the group functional departments”), to the extent that the activities of these departments related to SG CIB.

In terms of the geographic coverage of SG CIB’s operations, the plan of remedial measures covered both domestic operations in France and international operations. In respect of the international operations, our work was limited to the main centres for capital markets business: New York, London, Tokyo and Hong Kong.

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<sup>1</sup> SG CIB brings together all capital markets and financing activities aimed at corporates, financial institutions and institutional investors in Europe, the Americas and Asia-Pacific.

Throughout the course of work, we held regular meetings with the Special Committee to inform them of our progress, our preliminary conclusions, and, where necessary, to specify the manner in which we carried out certain aspects of our assignment.

Similarly, we also kept Société Générale informed of our progress throughout the course of our work.

At the end of our assignment, we obtained a letter of representation from Société Générale dated 21 May 2008, signed by the Managing Director and by the General Secretary, confirming, inter alia, that all relevant documentation and information had been made available to us.

## Limitations

We have not carried out an investigation of the Fraud. This work has been undertaken by the General Inspection department. As such, our work has been limited to: (i) an examination of the weaknesses in the internal control system, based on the causes of the Fraud and the circumstances in which it arose as identified by the General Inspection department; and (ii) an analysis of the remediation measures put in place by Société Générale. Furthermore, we did not, at any stage, carry out any procedures designed to attribute responsibility.

A criminal investigation is currently underway, the results of which are unknown at the date of this report. If new facts were to emerge, these may have an impact both on the Diagnostic review of the internal control weaknesses identified and on the relevance of the remediation actions that have been, or will be, taken.

Our work involved familiarising ourselves with the General Inspection department's work, which served as the starting point for our assignment, as well as with the remediation actions decided upon or implemented by SG CIB or by the group functional departments in the wake of the Fraud.

Our work familiarising ourselves with the findings of the General Inspection department and with certain underlying documents was necessary in order to produce the Diagnostic review. However, we did not carry out a formal review of the work performed by the General Inspection department. We did not perform any specific procedures designed to provide reasonable assurance that the General Inspection department had identified all of the mechanisms of the Fraud and the related internal control weaknesses. Similarly, we were not instructed to assess the overall relevance of the conclusions reached by the General Inspection department.

As regards the Diagnostic review, the objective of this report is not to set out the content of all the documentation obtained in the course of our work, but rather to present a structured analysis of the weaknesses uncovered as a result of the Fraud in order to enable a better understanding of the remediation actions envisaged by the bank. Consequently, this report is not designed to provide an exhaustive review of the events relating to the Fraud.

Our work was not aimed at identifying circumstances in which any other fraudulent acts may be committed, or at presenting the remediation actions envisaged for any other internal control weaknesses or anomalies regardless of their origin. Our analysis was limited to reviewing the weaknesses of the internal control system with respect to the characteristics of the Fraud suffered by Société Générale.

Our work on the plans for the remedial measures was based on the documentation provided to us by the various Société Générale departments concerned in the period up to 30 April 2008, with certain exceptions which are separately identified in this report.

As part of our analysis of the action plans and the underlying projects we assessed the appropriateness of the various objectives targeted. This assessment should not be construed as a means of establishing whether the implementation of the related projects will be effective.

Our work does not constitute an audit of all or of any part of the financial statements of the entities comprising the Société Générale group. Similarly, our work does not constitute a review of the system of internal controls or any of its parts. As such, on the basis of the work we have performed and the information on which our work was based, this report should not be interpreted as the expression of an audit opinion, an attestation report or any other form of certification in accordance with generally accepted auditing standards in France.

Our analysis of IT security arrangements carried out as part of the review of the Remediation and Transformation Plans<sup>1</sup> was strictly limited to the work necessary to obtain an understanding of the actions planned and to establish the status of those actions. We have not carried out an audit of the IT security system.

\* \* \*

In accordance with the commitment made by the Special Committee in its interim report which was published on 20 February 2008, the following document sets out our analysis of the bank's action plan. This report is accompanied by a summary of the Diagnostic review on the internal control weaknesses which permitted the Fraud to take place.

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<sup>1</sup> These terms are defined in the section of our report entitled "Action plan analysis", ("Project structure" section).

# Summary of the diagnostic review of the weaknesses of the internal control system

Against a backdrop of strong growth in trading volumes in the Equities division, there was a mismatch between the resources allocated to support and control functions and the level of front office activities. A lack of seniority also diminished the effectiveness of the back and middle office teams.

Furthermore, despite the level of investment made, information systems were unable to keep pace with the growing complexity of the general trading environment and process transactions effectively. A heavy reliance on manual processing and the workload of operating staff meant that certain of the existing controls in place were not operating effectively.

This general environment weakened the control system, encompassing back and middle offices as well the major group functional departments. The flaws revealed in the design, implementation and supervision of controls reduced their effectiveness vis a vis the Fraud.

In terms of design, the shortcomings of the system were apparent at several different levels:

- Several key controls that could have identified fraudulent mechanisms were lacking.
- As controls were split between several different units within the same function or sometimes between several different functions, and because procedures were insufficiently explicit, this made it difficult to obtain an overview of the situation and gain an appropriate insight into the exceptions identified. The lack of a systematic procedure for centralising and escalating red flags to the appropriate level in the organisation further exacerbated the problem.
- Procedures did not appropriately reflect the requirement in the group directive to analyse consistency of risks, results and positions. In practice, this role, which would have enabled an overview of the operations of the Delta One Listed Products desk, was not carried out. Additionally, there is no explicit reference to the monitoring of cashflows as a component of the internal control system which could have represented an additional red flag arising from the level of genuine activity of this desk.

In terms of implementation, there was a lack of an appropriate awareness of the risk of fraud, with the focus being rather to ensure that transactions were properly executed from an operational standpoint. This led to confusion between: (i) the production of exception reports and resolution of discrepancies; and (ii) the performance of controls designed to validate the accuracy of the explanations given and corrections put in place.

In terms of supervision, the internal control system was slow to react and urgently remediate the most sensitive issues, despite the fact that some weaknesses in internal control exploited by the Trader had been identified by the General Inspection department as an area in need of remediation.

In practice, the combination of these weaknesses throughout the entire operations processing chain (initiation, recording in the accounts, monitoring of limits and reconciliation) allowed the Trader<sup>1</sup> to conceal his speculative positions.

Although it does not preclude an independent control, the primary level of an effective control system remains management supervision. It was this supervision that was found to be lacking with regard to the Delta One team, in terms of both trading activities and management of individuals.

The Trader's line managers and superiors did not perform the necessary analyses of existing data schedules (detailing positions, valuations, earnings or cash flows) that would have revealed the true nature of the Trader's activities.

Front office activities developed against the backdrop of a strong entrepreneurial culture based on trust. The surge in Delta One trading volumes and profits was accompanied by the emergence of unauthorised practices, with limits regularly exceeded and results smoothed or transferred between traders.

The general environment did not encourage the development of a strong support function able to assume the full breadth of its responsibilities in terms of transaction security and operational risk management. An imbalance therefore emerged between the front office, focused on expanding its activities, and the control functions which were unable to develop the critical scrutiny necessary for their role.

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<sup>1</sup> Jérôme Kerviel, trader of the Delta One team within Société Générale's Equities division.



# ANALYSIS OF THE ACTION PLAN

Following the discovery of the Fraud, the Société Générale group put in place an organisation to handle the crisis under the oversight of the group resources director, a member of the Executive Committee. The crisis organisation was responsible, inter alia, for analysing the reasons for the Fraud and the circumstances in which it arose, particularly with regard to weaknesses in the system of internal controls and the deployment of remedial measures.

The Société Générale mobilisation in response to the Fraud took the form of a major change programme. The main feature of this programme is a series of initiatives designed to strengthen the system of internal controls within SG CIB ("the Project"). At this time, SG CIB considered it necessary to extend the scope of the remedial measures to cover the whole of its capital markets operations.

In the course of our work, we have undertaken a critical analysis of the remedial measures developed by Société Générale and included in the Project.

In this regard, we provided comments on the design and implementation phases of the action plans and on the prioritisation of the matters addressed in those plans based on our own experience, judgement and our knowledge of best practice in matters of internal control. Certain of our observations were integrated into the Project. Other observations are addressed later in this report.

We carried out a review of the implementation progress of a number of short term measures based on a scope defined by SG CIB.

In addition, for certain initiatives outside the scope of the Project primarily undertaken by the main group functional departments, we reviewed action plans and other documentation in order to establish the status of these, and undertook a critical analysis of these initiatives.

In this report, we have summarised the manner in which the Project was organised as well as certain other actions within the programme. Our report provides a critical review of the global programme and its status with regard to the causes of the Fraud and the circumstances in which it arose, as set out in the Diagnostic review.

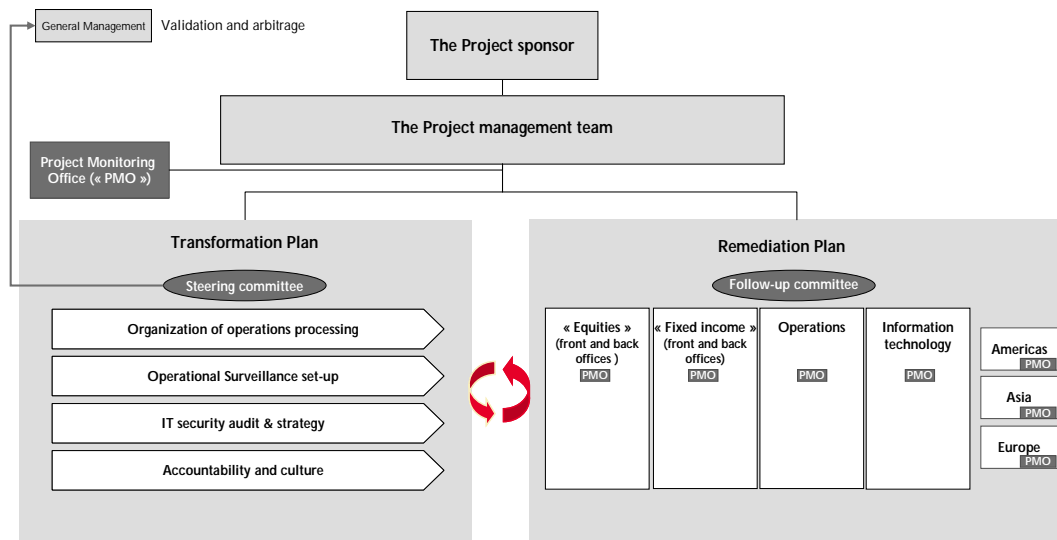
# Background to the Project

## Project Structure

The Project comprises two aspects:

- The Remediation Plan comprises a number of specific corrective actions designed to reactively address certain weaknesses identified as a result of the Fraud. These actions will eventually undergo a process of “industrialisation”<sup>1</sup> in order to ensure that the new system of controls is sustainable. In addition, the plan contains a series of specific actions (“the Underlying Actions”) which should enable operational processes to be simpler and more fluid in the future.
- The Transformation Plan is based upon four complimentary workstreams which are more structural in nature and are intended to improve the operational efficiency of the internal control system. It should be noted that certain of these projects were already under consideration prior to the discovery of the Fraud.

A diagram showing the organisation of the Project is set out below:



<sup>1</sup> By industrialisation we mean a process which enables control activities to be carried out using statements produced systematically from reliable sources for which receipt has been formally acknowledged and with automated workflows facilitating the operation of the control and the related audit trail.

## The Remediation Plan

In the days following the discovery of the Fraud, SG CIB decided to launch a global initiative intended to strengthen the system of internal controls in all of its capital markets operations: the Equities division<sup>1</sup> and the Fixed income, Currencies and Commodities division (the "Fixed Income" division).

The Remediation Plan was developed during the analysis of the causes of the Fraud and the circumstances in which it took place and continually amended throughout this review. This pragmatic approach was based on a progressive implementation of the plan. The principal stages were as follows:

- at the end of January 2008, the first corrective measures were established in order to put in place quick solutions in the most sensitive areas with reference to the internal control weaknesses identified during the discovery of the Trader's speculative positions;
- in March 2008, a second series of short term actions was added to the plan in order to reflect the results of the further analysis of the causes and circumstances of the Fraud;
- in April 2008, SG CIB prioritised these actions in order to establish a timetable, while also recognising the practical difficulties associated with the operation of certain controls. Following this review, some twenty steps were identified as priority actions.

It should be noted that the Remediation Plan does not exclude actions which could be decided upon within the divisions themselves or the different geographic locations in order to reflect their specific nature. Nevertheless, these actions are not covered in the scope of this report.

At 30 April 2008, the main priority actions in the Remediation Plan address the following areas:

- An improvement in the hierarchical supervision of front office activities. This is to be achieved by putting in place monitoring tools or activity control tools together with reinforcing the formal acknowledgement by the front office of its roles and responsibilities.
- A strengthening of the controls carried out by the back and middle offices by adding certain key controls which were considered to be absent. This should allow closer monitoring of operations and facilitate the identification of unusual situations.
- Improvements to IT security, particularly by means of measures which could come into operation immediately. The main objectives here are to strengthen identification and authentication procedures, as well as preventing front office staff having "write access" rights to middle office applications.

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<sup>1</sup> The activities of Lyxor, an asset management company attached to the Equities division, were not included in the scope of the Remediation Plan.

- A strengthening of the governance of the internal control system by further specifying the roles and responsibilities of each person, developing clear rules for escalating red flags up through the organisational hierarchy as well as up through the control functions. This governance will also ensure the effective independence of the front office function from the support and control functions.

Finally, the plan includes a number of Underlying Actions which address areas of weakness which already existed within SG CIB or are intended to guarantee greater fluidity in processes. Notably, they include strengthening the resources involved in the analysis and the resolution of suspense items or unreconciled transactions in order to bring these down to an acceptable level based on SG CIB internal risk standards.

## The Transformation Plan

The project workstreams of the Transformation Plan draw upon the lessons learned from the Fraud and are focused on providing the elements of a medium term response to issues such as:

- The structural development of the organisation and the overall functioning of the system of internal controls;
- Improvements in IT security;
- The cultural change necessary within SG CIB to embed the measures envisaged in the Project in a way that they become sustainable.

In this context, four major Project workstreams were identified:

- The project workstream “Organisation of operations processing” is aimed at reworking the operations processing organisation in order to enable a robust system of control independent of the front office.
- The main objective of the project workstream “Operational surveillance set up” is to strengthen the supervision of permanent controls<sup>1</sup> and the security of operations. This objective involves the creation of a cross business line structure charged with ensuring the quality of the design and operation of internal controls on the basis of an independent risk assessment. The role of this structure will also be to acquire tools to assist it with the identification of unusual situations or behaviour which might indicate the presence of fraudulent activity.
- The project workstream “IT security, audit and strategy ” includes, over and above the initial actions undertaken in the context of the Remediation Plan, complex projects which necessarily require broader consideration in the medium term. The main projects relate to the management of access rights, access controls and infrastructure and application security.

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<sup>1</sup> Under French banking regulations, banks are required to retain individuals to carry out both permanent and periodic controls. Permanent controls are controls carried out continuously by individuals whose sole function is to carry out controls, and by other individuals who also have operational responsibility.

- The objective of the “Accountability and culture” project workstream is to strengthen the formal frame of reference for activities based on general principles of professional ethics and precise descriptions of the responsibilities of each person by producing handbooks and putting in place formalised mandates for the traders.

## Governance and resources allocated to the Project

The Project has been placed under the direct supervision of the head of SG CIB who is also a member of the Executive Committee of the Société Générale group. The head of SG CIB is assisted by a project management team.

The Project Monitoring Office (“PMO”) is supported by an external firm responsible for organising the work and monitoring progress both in France and in other territories. A matrix organisation has been put in place in order to ensure that implementation is carried out by business line, by function and by geographic region. The organisation of the PMO mirrors this matrix structure.

Two committees have been created:

- The Remediation Plan follow up committee which comprises representatives from the front office, the support and control functions, human resources and IT management at the level of SG CIB, together with representatives of the group functional departments such as risk management and compliance. Initially the committee met weekly. From May 2008 onwards it will meet twice a month.
- In addition to the leaders of the four project workstreams, the Transformation Plan steering committee comprises the leaders of SG CIB activities and of the major group functional departments who are also members of the Executive Committee of the Société Générale group. The committee met for the first time at the end of April 2008 and intends to meet on a monthly basis.

A prioritised list of remediation actions has been established and agreed by the Project leaders. On the basis of this list, an approval process has been put in place for remediation actions on a workstream by workstream basis which has been validated by the Project management team.

The approval of an action which in turn releases a budget allocation is based upon a review of the risk addressed, consideration of the nature of the request in the context of the Project and also the availability of the resources necessary to carry out the workstream.

## The Remediation Plan

As set out above, the Remediation Plan evolved during the process of analysing the causes of the Fraud and the circumstances in which it took place. As at 30 April 2008, it comprises some twenty specific actions.

Taken as a whole, we believe that the nature of these actions is such that they will contribute to the resolution of the internal control gaps and weaknesses which came to light in the Diagnostic review. For example:

- The aim of implementing or strengthening controls at level of the middle office and the back office is to ensure that transactions are genuine and that, where transactions are cancelled or modified after input, there are valid reasons for doing this. The origin of these actions reflects the techniques used by the Trader to conceal his activities.
- The introduction of new controls over significant size transactions or the cumulative nominal value of positions should improve the supervision of front office activities by escalating relevant red flags.
- The steps to be taken at the level of governance of the system of internal controls aim to ensure that the escalation process for red flags becomes simpler and more relevant.

These actions can be grouped into three categories:

- The first category includes ten corrective actions which were quickly identified by SG CIB following the discovery of the Fraud. In light of the circumstances, these actions became a priority in the days following the discovery of the Fraud ("the Initial Ten Actions"). It should be noted, however, that in our opinion the biometric authentication controls should be considered as a pilot exercise for a specific technology at this stage rather than a genuine control.
- The second category comprises additional measures, certain of which were identified later in the process.
- The third category relates to the Underlying Actions which are aimed primarily at simplifying certain operational processes.

The population of actions is summarised in the table below:

<i>Areas</i>	<i>Actions</i>	<i>Category</i>
<b>Front office supervision</b>	Control over the nominal value of transactions (covering significant size transactions and the nominal value of positions)	■
	Improvements in monitoring of vacations	■
	Control over initial margin requirements ("IMR") and margin calls for listed futures	■
	Control over fees paid to brokers	▲
<b>Controls performed by middle and back offices</b>	Control over transactions cancellations / modifications	■
	Control over deferred start date transactions	■
	Confirmation of internal and intercompany transactions	■
	Improvements in the security of transactions using "technical" <sup>1</sup> counterparties	▲
	Control over transactions using "off market" prices	▲
	Improvements in the security of payments	▲
	Control over "non transactional" flows	▲
<b>Information security</b>	Regular change of passwords for sensitive applications	■
	Reinforcement of access controls for the most sensitive applications (Biometry)	■
	Cancellation of front office "write access" rights for middle office applications	■
<b>Internal control system monitoring</b>	Development and distribution of a handbook for the middle office Trading Support Unit	▲
	Development of an escalation procedure for red flags arising as a result of control procedures and update of distribution lists	■
<b>Underlying actions</b>	Clearing of backlogs of unreconciled items	●
	Improvements to the quality of recording of transactions in the system	●
	Optimisation of front vs back office data reconciliation processes	●
	Improvement of reconciliation processes with clearing houses and custodians (this relates to the Equities division)	●
	Strengthening of "groupe opératoire" booking rules	●

■ <i>The Initial Ten Actions</i>	▲ <i>Additional actions</i>	● <i>Underlying Actions</i>
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<sup>1</sup> The term "technical" counterparty refers to the generic denominations such as "pending", for example, entered in the main transactions' management application when, for example, the counterparty of a transaction is not yet registered in the client reference database.

## Review of implementation status of the Initial Ten Actions

As part of our work, we analysed whether the Initial Ten Actions are designed to cover the targeted risks and we performed a review of the progress of their implementation as at 30 April 2008.

We wished to cover the main SG CIB locations carrying out capital markets business. As a result, we selected Paris, New York, London, Hong Kong and Tokyo. More than 80% of SG CIB's traders are based in these locations.

Within this framework, SG CIB identified businesses where, in its judgment, the implementation of the Initial Ten Actions was sufficiently advanced to enable us to perform our review.

Our review has covered SG CIB businesses where 41% of the total number of traders are located, including 45% of traders in the Fixed Income division and 37% of traders in the Equities division. It should be noted that the Delta One team was included in our scope with the exception of its "Emerging markets" business.

Our detailed work, which was carried out on a non-statistical sample of transactions, took place during the second part of April 2008.

### The SG CIB principles which underly the design of the Initial Ten Actions

SG CIB systematically sought to employ the following general principles of efficiency and governance when designing and organising the Initial Ten Actions:

- the operator of the control has the explicit information necessary to obtain a sufficient understanding of the subject and to perform his control task;
- controls are performed by individuals who are independent of the persons subject to the control, or by the supervisor of the person subject to the control in situations where only the supervisor has the necessary information and expertise to carry out the control;
- the direct supervisors of the individual carrying out the control and the persons subject to the control are automatically involved, in order to allow them to react or to request additional information when the evidence presented in support of the control appears incomplete or unsatisfactory;
- in addition to the first level controls, there are effectively two types of review: one to ensure that the controls and escalation procedures are carried out and that this takes place within the required timeframe; and the other, which is performed by the supervisors of the individual carrying out the controls, is to ensure the quality of the controls performed;
- the control processes should be harmonised between the different capital markets businesses.



More specifically with regard to IT security, SG CIB sought to adopt the principle that the controls put in place in the short term should be incorporated into a global plan for improving the security of information systems. In this regard, these short-term actions were designed as the first stage of the wider projects included in the Transformation Plan.

We consider that the principles presented above are relevant. Additionally, our review confirmed that these principles were generally respected during the control design process.

### **Preliminary comments on the results of our review of the implementation status of the Initial Ten Actions**

To allow the results of our review to be appropriately understood, it should be noted that the objective of our review was to assess the implementation status of the Initial Ten Actions.

As part of the Remediation Plan, it is anticipated that this first stage will be followed by a process of “industrialisation” which will contribute to:

- increasing the reliability of the process for producing the information necessary to carry out the control and managing the related operational risk. The numerous extracts from computer systems on which the controls we reviewed were based, were in fact the subject of a brief test. However, the results of this test were not documented sufficiently to provide any assurance as to the integrity and completeness of the information used;
- the definition and implementation of workflow tools which will enable uniform management and automation of the different stages of the control. Currently the designs which have been implemented are based primarily on manual procedures which contain an element of intrinsic operational risk.

The thresholds which trigger the operation of a control and the parameters used to define the scope of the implementation of the controls are both key factors in determining their relevance. Both of these factors were determined by SG CIB on the basis of a simplified analysis in order to ensure that controls were implemented rapidly. We recommend that SG CIB refines these elements in light of the results seen to date.

In particular, in cases where there is no difference between the thresholds which apply in France and the thresholds used for foreign operations, the controls in the foreign operations become less relevant. For example, the thresholds for monitoring significant size transactions are not sufficiently tailored to the scale of the operations in foreign locations. The scale and the nature of foreign operations require these thresholds to be tailored.

More specifically, the limits which apply to the cumulative nominal amount of positions were established based on the limits which SG CIB considers acceptable in its existing operations. Additional review will doubtless be necessary in order to appropriately address risks which may be a combination of market risk and operational risk.

Finally, the parameters of certain of the queries used in the context of the new controls in order to identify unusual situations, generate exception reports which also include routine transactions. As a result, this creates a burden for the operation of the controls. This is the case, for example, for the monitoring of transactions with a deferred start date. These queries should be customized as appropriate in order to improve the efficiency of the controls.

## The results of the review of the implementation status of the Initial Ten Actions

Given the short term requirement to rapidly improve the security of the control system in the first phase, we have considered a control to be “implemented” if it is operational, if it has been documented and if there is an audit trail, even if the audit trail is imperfect.

It will only be possible to establish whether the controls have been effectively implemented in accordance with best practice if a review is carried out after the completion of the “industrialisation” phase and the tailoring of the control thresholds and the control parameters.

The summarised results of our review of the progress of the implementation of the Initial Ten Actions are set out in the table below:

### IMPLEMENTATION STATUS OF THE INITIAL TEN ACTIONS

Actions	Summary of our findings
<p><b>Control over the nominal value of transactions</b> <i>Significant size transactions</i></p>	<p>The objective of this control is to monitor significant size transactions.</p> <p>The control was appropriately designed to achieve the required objective. We noticed some exceptions in its operational implementation:</p> <ul style="list-style-type: none"> <li>▪ In certain cases, there was no formal evidence that the control was operating in the Equities division;</li> <li>▪ For the Fixed Income division, we noted cases where certain traders did not obtain prior approvals.</li> </ul> <p>As such, this control is not operating across the full perimeter of our review.</p>
<p><b>Control over the nominal value of transactions</b> <i>The cumulative nominal value of position</i></p>	<p>The objective of this control is to put in place a set of limits to monitor the nominal value of positions (the concept of a “gross nominal limit”).</p> <p>The control was appropriately designed to achieve the required objective. We consider that this control has been implemented in the Fixed Income division. As for the Equities division, it is in the process of implementation, awaiting resolution of technical problems which frequently affect the reliability of daily control statements.</p>
<p><b>Improvements in monitoring of vacations</b></p>	<p>The objective of this action is to upgrade the procedure to monitor the minimum number of consecutive vacation days taken by SG CIB employees.</p> <p>The design as described in the procedure has been implemented. We recommend that the five days minimum threshold used in Asia should be increased to ten days for high risk personnel groups in line with other locations reviewed.</p>
<p><b>Control over initial margin requirements (« IMR ») and margin calls for listed futures</b></p>	<p>The objective of this control is to monitor movements in the cash position by “<i>groupe opératoire</i>”<sup>1</sup> (“GOP”).</p> <p>SG CIB’s approach was to begin by focusing on the IMR and margin calls for listed futures which represent a significant source of cash outflows.</p> <p>This control has not been implemented as a result of technical problems. An analysis is currently under way to find other means of monitoring movements in the cash position at the GOP level.</p>

<sup>1</sup> In the analytical structure used by Société Générale a « *groupe opératoire* » corresponds to the unit for which profit and losses are calculated.

Actions	Summary of our findings
<p><b>Control over transactions cancellations / modifications</b></p>	<p>The objective of this control is to identify and to validate any modifications to, or cancellations of, transactions that have already been recorded.</p> <p>The control was appropriately designed to achieve the required objective except for the monitoring of modifications to transactions in the Fixed Income division. In fact, the interim procedure which has been put in place pending the IT developments necessary, does not cover all of the transactions which should be subject to the control.</p> <p>We consider that this control has been implemented in the Equities division. For the Fixed Income division, we consider that the control over the cancellation of transactions has been implemented. However, for modifications to transactions, we recommend that the target solution is quickly put in place.</p>
<p><b>Control over deferred start date transactions<sup>1</sup></b></p>	<p>The objective of this control is to ensure that transactions with a deferred start date are genuine and reasonable.</p> <p>For the Equities division, the control was appropriately designed to achieve the required objective and we consider that it has been implemented. In certain cases, the quality of the audit trail requires improvement.</p> <p>For the Fixed Income division, the control does not fully achieve the two objectives required in practice:</p> <ul style="list-style-type: none"> <li>▪ the control over the justification of reasonableness of the transactions has not been implemented;</li> <li>▪ although the requirement to confirm that the transaction is genuine has been correctly defined in the procedure, the control has not been implemented for the following reasons: <ul style="list-style-type: none"> <li>• a significant backlog of unreconciled transactions with deferred start dates means that officers have been unable to carry out this new control;</li> <li>• IT tools have not been customised in order to meet the requirements of this control.</li> </ul> </li> </ul>
<p><b>Confirmation of internal<sup>2</sup> and intercompany transactions</b></p>	<p>The objective of this control is to confirm that internal transactions are reconciled and transactions with other group entities are formally confirmed.</p> <p>The control was appropriately designed to achieve the required objective and we consider that this control has been implemented. In certain cases, the quality of the audit trail should be improved.</p>
<p><b>Regular change of passwords for sensitive applications</b></p>	<p>The objective of this action is to ensure that passwords for users of the most sensitive applications are changed regularly.</p> <p>The control was appropriately designed to achieve the required objective. However, we do not consider that it has been fully implemented yet. As at 30 April 2008, this action has been completely rolled out across a quarter of the applications targeted in the short term. Additionally, we identified a certain number of exceptions, the majority of which had already been identified by SG CIB and corrective measures are being put in place.</p>

<sup>1</sup> In the case of this report, a “deferred start date transaction” is a transaction for which the value date is five or more days later than the date on which it was entered into.

<sup>2</sup> Internal transactions are transactions between different profit centres within the same legal entity.

Actions	Summary of our findings
<p><b>Reinforcement of access controls for the most sensitive applications (Biometry)</b></p>	<p>In our opinion the biometric authentication controls should be considered as a pilot exercise for a specific technology at this stage rather than a genuine control.</p> <p>This pilot aims at implementing a biometric solution to replace logins and passwords for “<i>Windows</i>”. It has been deployed in the Delta One team middle office.</p> <p>In the operational deployment of this solution, we identified exceptions which related both to the scope of its implementation (certain officers were not equipped) and to the effectiveness of the use of the system (biometric cards were left in open access areas). In these circumstances, we consider that the implementation of this action is still ongoing.</p>
<p><b>Cancellation of front office “write access” rights for middle office applications</b></p>	<p>The goal of this action is to cancel front office “write access” rights to certain middle office applications.</p> <p>We consider that the implementation of this action is still ongoing:</p> <ul style="list-style-type: none"> <li>▪ It has been fully rolled out across one of the three applications in the scope for this action;</li> <li>▪ for the second application, implementation cannot proceed without prior IT developments;</li> <li>▪ our review identified numerous exceptions in the third application.</li> </ul> <p>SG CIB had already identified the majority of the exceptions and had initiated corrective measures or IT development work necessary to address these.</p>
<p><b>Development of an escalation procedure for red flags arising as a result of control procedures and update of distribution lists</b></p>	<p>The objective of this action is to design an escalation procedure for red flags and to identify and update the various supervisory levels in this procedure.</p> <p>The procedure was appropriately designed to achieve the required objective and we consider that it has been implemented. Nevertheless, we recommend that the closing process for red flags in the “Fixed Income” division is defined more clearly.</p>

In general terms, our review has highlighted the complexity of an exercise aimed at covering the whole of SG CIB’s capital markets operations. Certain controls have not been implemented as a result of IT constraints and difficulties experienced in extracting the relevant information. As a result, progress in implementing the Initial Ten Actions has been mixed. For certain initiatives, the controls have not yet been implemented or alternatively significant remediation work is required.

Based on the results of our review, the Equities division appears to have made more progress in implementation than the Fixed Income division. There are several reasons for this, primarily:

- Efforts to implement the Initial Ten Actions were focused in the first stage on the Equities division because this is where the Fraud took place;
- The information system used by the Equities division is more uniform. As a result, implementation is easier from a practical point of view.

Finally, in the course of our implementation review, we noted a sustained commitment from all teams to the process. This commitment has been further strengthened by supporting measures aimed at specifying what needs to be done. It will be necessary to maintain the same level of engagement throughout the implementation phase in all the relevant areas.

## The Additional Actions

As at 30 April 2008, the Additional Actions included in the Remediation Plan are in a start-up phase. The objectives of these actions have been defined and those responsible for these actions have been identified.

These actions should contribute to the remediation of the weaknesses identified in the context of the Diagnostic review, such as, for example, controls over fees paid to brokers, improvements in security over transactions with “technical” counterparties and controls over transactions using “off market” prices.

We were unable to review the status of these actions with the exception of the development and roll out of a handbook for the middle office “Trading Support Units”<sup>1</sup>. In this case we were made aware of certain concrete developments.

### Handbook for the middle office Trading Support Units

The handbook for the middle office Trading Support Units provides definitions of roles and responsibilities and, in particular, clarifies their organisational independence in matters of recruitment and performance appraisal. The handbook has been completed and distributed to most of the operations in France. The roll out of the handbook to the foreign operations is currently in progress.

An outline summary has been prepared for a plan for complementary actions which address the broader organisation of the middle office Trading Support Units. It anticipates the consideration of career development within this function.

## The Underlying Actions

This series of actions is aimed at reducing the volume of work required in dealing with manual tasks, suspense items and anomalies which act as a burden on the exercise of daily control activities.

It should be stressed that several of these workstreams existed prior to the discovery of the Fraud. Nevertheless, we consider that the integration of these actions into the overall Project represents an important step in making the Remediation Plan sustainable and increasing the robustness of the measures contained within it.

The various workstreams may be classified into steps required to clear suspense items and measures intended to simplify operational processes.

### Steps to clear suspense items

Dedicated teams have been, or will be, mobilised in various different workstreams. Their objective is, on the one hand, to reduce the level of suspense items or unreconciled transactions and, on the other, to examine the reasons for these items and develop a structural solution.

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<sup>1</sup> The middle office Trading Support Unit is a unit responsible for recording transactions initiated by the front office and for carrying out the first level of controls over these operations.

For example, in the Equities division, the workstreams concern the following:

- the treatment of confirmations of Over The Counter transactions;
- the treatment of cash and share suspense items on listed markets.

The objective of these workstreams is to reduce the volume of suspense items to a level established by SG CIB which reflects the risk related to the age and the amount of these items, between now and the end of 2008.

It appears from the results of the review of suspense items which have been brought to our attention that there are a number of reasons for these. Suspense items arise as a result of IT weaknesses in automated processes, difficulties in managing the increase in the volume of items dealt with using manual processes and also non-standardised market practices, in the area of confirming transactions for example. All internal issues are being addressed and it is clear that their resolution is heavily dependent upon the development of IT tools.

### **Actions to simplify operational processes**

Several measures have been identified which are designed to improve the efficiency and robustness of operational processes and to facilitate the implementation of the new controls. These are currently in the process of being launched and include:

- improvements in the quality of recording transactions;
- the simplification of GOP structure with clear rules governing its use;
- measures to ensure that reconciliation processes between both front and back offices and between custodians and clearing houses are made more robust.

These measures complement other initiatives which were already envisaged before the discovery of the Fraud and which are aimed at optimising the operations processing chain from the front office to the accounting department.

We have not been provided with the timetable for the implementation of these measures. We understand that this is in the process of being finalised.

### **The forecast roll out for the Remediation Plan initiatives**

At the end of April 2008, SG CIB provided us with a preliminary phased roll out plan for the initiatives contained in the Remediation Plan. This roll out plan has subsequently been expanded and amended.

We understand that this plan takes into account the lessons learned from the implementation of the first actions. The phasing of the roll out should enable the tasks to be organised and dedicated resources to be allocated to these tasks.

The table below sets out the forecast for implementation of the Remediation Plan actions (excluding the Underlying Actions) as communicated to us by the leaders of the Project<sup>1</sup>. We understand that the target dates refer to the dates by which the roll out will be completed across all of SG CIB's capital markets operations and include the "industrialisation" phase. We have not carried out any work in order to validate the reasonableness of this information.

Actions	Target date	2008			2009
		May	Q3	Q4	
Control over the nominal value of transactions	September 2008	40-50%	100%		
Improvements in monitoring of vacations	September 2008	40-50%	100%		
Control over initial margin requirements ("IMR") and margin calls for listed futures	December 2008	(1)	70%	100%	
Control over fees paid to brokers	December 2008	-	50%	100%	
Control over transactions cancellations / modifications	December 2008	40-50%	70%	~100% (2)	
Control over deferred start date transactions	September 2008	40-50%	100%		
Confirmation of internal and intercompany transactions	September 2008	40-50%	100%		
Improvements in the security of transactions using "technical" counterparties	Q1 2009	20-30%	50%	90%	100%
Control over transactions using "off market" prices	December 2008	-	50%	100%	
Improvements in the security of payments	Q1 2009	15-20%	50%	90%	100%
Control over "non transactional" flows	Q2 2009	20-30%	50%	90%	100%
Regular change of passwords for sensitive applications	Q4 2008	25-30%	(3)	100%	
Reinforcement of access controls for the most sensitive applications (Biometry)	The action is followed up in the "Information security, audit and strategy" workstream of the Transformation Plan.				
Cancellation of front office "write access" rights for middle office applications	June 2009	33%	(3)	67%	100%

<sup>1</sup> Source: Presentation communicated by SG CIB to the Special Committee on 12 May 2008, confirmation obtained from the IT department of the Equities division on 7 May 2008 and e-mail from the PMO dated 13 May 2008.

Actions	Target date	2008			2009
		May	Q3	Q4	
Development and distribution of a handbook for the middle office Trading Support Unit	-	(4)			
Development of an escalation procedure for red flags arising as a result of control procedures and update of distribution lists	September 2008	40-50%	100%		

- (1) Control design should be significantly modified due to technical difficulties during its implementation. The new implementation target date will be confirmed once the new design is finalised.
- (2) 100% of the Equities division has been covered. Certain very specific tools used in the Fixed Income division will be covered at the beginning of 2009.
- (3) Percentage of progress not communicated.
- (4) In Paris, handbooks were distributed to all officers targeted by the action. Formal confirmations of receipt were obtained for 100% of the population in the Equities division and for 90% of the population in the Fixed Income division. The review of these handbooks is in progress in foreign locations. The deadline for formal confirmations of receipt was set to 10 June 2008.

In general terms, the plan reflects the willingness of SG CIB to put in place remediation measures.

In this regard, we consider that 30 June 2008 should represent a significant deadline for the effective implementation of the first controls. The achievement of this deadline will be an important milestone for the credibility of the roll out process. It may be considered to be an ambitious target particularly given the technical problems encountered in the implementation of certain controls.

We recommend that progress in implementing the plan should be reviewed on a quarterly basis by the bank's periodic control<sup>1</sup> teams, with a report prepared for the Board of Directors.

## The Transformation Plan

The project workstreams contained in the Transformation Plan relate to the medium term and cover organisational and cultural matters as well as IT infrastructure. Frameworks are in the process of being drawn up for these projects and detailed "road maps" should be available by the end of June 2008. A road map is already available for the "Accountability and culture" workstream.

At the same time, specific actions have already been identified by project workstream and certain of these are in the process of implementation. These actions should enable the content of the control system to be improved, although their full effect will only be felt over time.

<sup>1</sup> Under French regulations, banks are required to retain individuals to carry out both permanent and periodic control. Periodic control is carried out by means of investigations undertaken by entirely independent teams such as the internal audit or General Inspection departments.



## Workstream “Organisation of operations processing”

The areas addressed in this project workstream are, by their nature, capable of contributing to the resolution of certain weaknesses in the design of the internal control system which were highlighted as a result of the Diagnostic review, in particular:

- The absence of any analysis or review of the consistency of the results of the capital markets business carried out independently of the front office.
- The lack of integration which, in practice, leads to the fragmentation of controls between several units and inhibits the ability to read across and obtain an overall understanding of operations.

The most advanced initiative in this project workstream relates to the creation of a Product Control Group.

This ambitious project is intended to simplify the complex process of operations processing and make it more robust. The Product Control unit is to be positioned at the heart of the process for recording transactions, for valuing positions and for producing the results of the capital markets business.

### Product Control Group objectives

It is envisaged that the objectives of the Product Control Group will be as follows:

- To produce the accounting and economic P&L for capital markets operations independently.
- To put in place controls over consistency to enable the results of a given trading desk to be understood, in particular by reference to the underlying operations processed.

The establishment of the Product Control Group should make a qualitative difference to the system for processing and controlling operations currently in place. By way of example:

- by bringing together the tasks currently carried out by seven different services attached to the risk management department, the operations division and the finance department, the Product Control Group will have an overview of front office operations;
- by integrating the daily economic and accounting P&L production and consistency control tasks in one structure, this should facilitate the operation of the monthly control procedures;
- the range of technical skills of the teams dedicated to the processing and control of operations will be strengthened and should enable the front office to be challenged in a constructive way.

### Status at the end of April 2008

The results of the study phase will be finalised by 30 June 2008 and will include a draft outline of the proposed Product Control Group organisation structure. The exact scope of the activities to be included within the remit of the Product Control group is currently subject to review.

## Key success factors

We consider that there will be a number of critical factors to manage in the implementation of the Product Control Group. In particular:

- achieving the right balance between the dual functions of operations processing and exercising control, particularly during periods of high activity. This will depend, at least in part, on the outcome of the actions to optimise operational processes which are currently under way<sup>1</sup>;
- over and above the task of producing the daily economic P&L, the Product Control Group must become the entity which is responsible for exercising control over the consistency of the positions recorded, changes in market parameters and the P&L results achieved. This represents a key control for capital markets operations, whether dealing with complex or straightforward operations;
- in the context of the proposed implementation of the Product Control Group, it is useful to consider the roles of all of the functions involved in the chain of control. In this regard, we believe it helpful to consider the involvement required of the functions exercising control based on the detailed breakdown of the daily results (the notion of “P&L attribution”). This process is currently the sole responsibility of the front office;
- in order to fully understand the processing of capital markets transactions, it is necessary to have a wide range of skills and experience including, but not limited to, mathematics and accounting. The relevant profile would also include individuals currently carrying out certain of these activities in support and control functions as well as risk management. Existing resources would need to be complemented by training and recruitment initiatives. The ability to bring together and maintain a team with the right blend of skills, experience and appropriate seniority within the Product Control Group will be an important factor in establishing the authority of this group vis a vis the front office;
- the leader of the new group has yet to be identified. However, the experience and the character of this individual will be fundamental to establishing the credibility of this group within SG CIB.

## Workstream “Operations Surveillance set up”

This project workstream was established in order to remedy certain weaknesses in the system of permanent controls which were highlighted in the Diagnostic review:

- with regard to control design, we noted weaknesses at various levels: the absence of certain controls, fragmented controls, procedures which were not sufficiently explicit and the lack of a systematic process for centralising red flags;
- with regard to oversight, we noted that the system was insufficiently reactive to enable urgent corrective actions to be taken in the most sensitive areas;

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<sup>1</sup> For more details, please refer to the table relating to the Underlying Actions.

- with regard to training, the low level of awareness of internal fraud risk amongst personnel enabled the Fraud to remain undetected.

### **Objectives of « Operations Surveillance set-up »**

It is envisaged that an Operations Security function will be established. The role of this function will be to monitor the adequacy of the system of internal controls in light of the risks inherent in capital markets activity. The objectives assigned to this supervisory and monitoring body are as follows:

- To define the governance, policies and standards applicable in the area of operations surveillance;
- To coordinate the different processes within SG CIB for managing operational risks, in particular in the context of the Basel 2 reforms: the mapping of risks, the collection of information in respect of operational losses and the capital adequacy requirements;
- To put in place a system for monitoring key performance indicators and key risk indicators, to centralise red flags and to proactively manage crisis situations;
- To facilitate the decision making process relating to improving the robustness of operations while coordinating the involvement of a series of cross functional committees dealing with internal control matters which either exist already or are still to be created;
- To ensure that control designs are relevant, fulfill the objectives of the control and are implemented efficiently;
- To develop second level controls targeted at fraud risk by means of the creation of an anti-fraud unit and the implementation of a tool to assist in the detection of fraud;
- To organise and undertake training activities and raise awareness of risk, particularly the risk of internal fraud.

This organisation, which will comprise several dozen people, will operate in all of the main geographic locations – Paris, London, New York, Tokyo and Hong Kong.

### **Status as at the end of April 2008**

In the process of setting up cross functional committees on internal controls, a number of measures have been decided upon, certain of which are already in operation. They relate to the following:

- The revision and strengthening of procedures in relation to the “New Products Committee”.
- The establishment of an “Internal Control Committee”. The objective of this committee will be to ensure that the risks inherent in operations processing are correctly identified and addressed. This committee will bring together the heads of the control functions and the business line heads. The committee will be supported by the establishment of a committee with specific responsibility for monitoring limits and red flags.

- The choice, for a pilot trial, of a tool to assist with the detection of the fraud based on a statistical analysis of unusual or atypical situations and behaviours. The tool has already been selected and will be tested in the Equities division until the end of the second quarter of 2009 before a decision is taken on its effective deployment across all capital markets businesses.

More generally, the year 2008 will be dedicated to actions such as recruitment, putting in place organisational structures, training and raising awareness of internal fraud risks. The activities of this workstream, in particular the review of the operations control system and implementation of the tools discussed above will gradually accelerate and will extend beyond mid 2009.

Once teams are organised, we consider that there are two tasks which are short term priorities:

- A critical review of the procedures already in place, applying a view of the risks concerned across the organisation.
- A review of the respective roles of various control functions in order to ensure full coverage of risks.

### Key success factors

The added value of the Operations Security function relates to the ability to read across and provide an integrated view of controls that has been lacking in the past and the continuous upgrade of the internal control system to adapt it to changes in the capital markets environment.

In our view, this function represents a key element in increasing the professionalism of the internal control system and ensuring the sustainability of the actions initiated as part of the Project which go beyond the objective of detecting or preventing fraud.

In this respect, this function would progressively work very closely with other functions, in particular compliance and internal audit. For example, this would be the case for:

- the organisation of the follow up of recommendations made by Internal Audit, the General Inspection department, regulators or external auditors if they apply on a cross business line basis;
- the escalation of red flags to these functions in order to allow them to react in an appropriate way. In this respect, the Operations Security function should doubtless launch a global review of the rationalisation of risk indicators and the setting of alert thresholds.

To succeed in its brief, the Operations Security teams should comprise control specialists able to bring a forward looking vision of the developments necessary to the internal control framework to tailor it to the business and the risk environment. This kind of vision may be sometimes lacking at the level of the local or operational teams.

In this respect, the identification of the individual who will head this team remains a key success factor for the visibility of this function and the progress of the workstream.

Care should also be taken to ensure that the creation of this function does not impair the role or responsibilities of the operational managers who carry the primary responsibility for internal control.

## **Workstream “IT security, audit and strategy”**

Although the Fraud did not arise as a result of flaws in the information systems, its analysis has uncovered weaknesses in the IT environment, particularly in relation to IT security.

Since part of the weaknesses in IT security is directly linked to the design of the applications, some of which were installed some ten years ago, resolving these problems will require the implementation of underlying actions.

In this respect, most of the actions included in the Transformation Plan related to IT security have been grouped in a IT security development plan which is due to be implemented by 2010. Of the projects included in this development plan, some are directly linked to the issues addressed by the Project. These projects can be grouped into four themes and will be implemented in parallel. The main measures are set out below.

### **Management of accounts and access rights**

This group of projects aims to overhaul the processes for managing accounts and access rights for those applications deemed “sensitive”. In particular, it includes regular reviews of access rights, the definition of standard user profiles and the setting up of an automated system for creating and cancelling user accounts.

The first step will be a high level review of access rights to the main applications. Of the sensitive applications, about 50 are considered high priority and should be dealt with by the end of 2008.

### **IT access control mechanisms**

This group of projects is concerned with:

- implementing a reinforced authentication system for access to sensitive applications;
- reducing the number of passwords that one person needs to access the various applications used by that individual by centralising the management of these passwords within a single system. In parallel, a software package will be rolled out that will enable users to save their passwords in a secure manner. These measures will be implemented gradually and should be fully in place by the end of 2009;
- eliminating the possibility of automatically logging on to applications via passwords registered within spread sheets. This action should be completed by the end of 2008 for the applications in the Equities division. Similar steps will also be taken for the Fixed Income division.

## Securing the applications and the technical infrastructure

Projects with this theme will continue technical reviews related to the security of applications and the implementation of remedial measures. By the end of 2008, the weaknesses identified in the Equities division's main transaction management application should be corrected. This project is scheduled to continue at least until the end of 2010 in order to deal with other applications.

Concomitantly, it has been decided to reinforce certain routine security management procedures, including, inter alia:

- improved incorporation of security considerations upstream of IT projects;
- closer monitoring of an IT system's compliance with security policy;
- improved management of corrective security measures.

## Implementation of mechanisms for detecting anomalies

It is planned to implement an ex-post control which will make it possible to verify the consistency between an application's user and the work station used. By the end of 2008, this measure should cover approximately 30 applications identified as high priority and as a result should strengthen the mechanisms for tracking actions carried out within the IT system.

## Key success factors

We consider that the actions defined in the IT security workstream, combined with the shorter-term actions regarding IT security in the Remediation Plan represent a coherent set of measures that should significantly and progressively improve IT security by the end of 2010.

Taken individually, some of these projects seem ambitious to us and will require particular attention. This is the case for the overhauling of the processes for managing accounts and access rights, the generalised implementation of a stronger authentication system, centralised password management and enhanced application security.

In our opinion, the simultaneous implementation of the various projects related to this workstream is essential, given the times necessary for their completion. However, doing so contributes to the complexity of the undertaking, which will require rigorous monitoring throughout the process. Considering the interdependencies and interactions between the various projects, at this stage the pace of implementation of the measures appears reasonable but remains challenging nevertheless.

Lastly, given the number of existing applications, we consider it essential to clearly prioritise the implementation of the measures according to how critical these applications are. To do so, we have recommended that an analysis be carried out of the exposure to fraud risk represented by each of these applications, which should be completed by the end of June 2008. This should make it possible to further refine the priority levels that have already been established.

## Workstream “Accountability and culture”

### Objectives of the workstream “Accountability and culture”

The objective of the workstream “Accountability and Culture” is to strengthen the formal business environment relying on common principles of professional ethics. It is being implemented through the following series of short and long term actions:

- preparing practical handbooks which are tailored to each business and specify each participant’s roles and responsibilities. The roll out of these handbooks will be supported by communication initiatives;
- introducing formal trader mandates for all teams concerned;
- developing a training programme on fraud prevention, particularly in relation to trading activities;
- overhauling the performance appraisal process in order to more accurately capture the managerial and behavioural dimension;
- implementing a communication and awareness programme targeting professional ethics principles and the translation of these into behaviours;
- for the support and control functions, a senior manager hiring programme and the targeted review of the remuneration scale.

These actions are aimed at overcoming the weaknesses in supervision of personnel, coaching and risk awareness.

### Status at the end of April 2008

The objectives, timetables and resources have been defined for all of the actions in this workstream. They should be implemented by the end of 2008. In many cases, implementation is already underway:

- the handbook formally defining the traders roles and responsibilities, including those related to team and activity supervision, has been distributed in France and is in the process of being rolled out in foreign locations;
- this handbook is complemented by another important element - the individual trader’s mandate - specifying, in addition, the instruments and strategies the trader is authorised to use, the limits allocated to the traders and the GOPs under the trader’s responsibility. At the end of April 2008, some dozens of mandates had been signed. The impact of the trading handbook and the individual trader’s mandates will be reinforced by the implementation of a formal acceptance process that emphasises the commitments made by the traders and is aimed at increasing their sense of ownership of these responsibilities;

- since the end of March 2008, communication actions have been launched to mobilise all SG CIB teams around the shared values of “rigour, transparency, discipline and courage” and responsibility for the quality and security of operations processing. Nearly three thousand employees have attended these presentations in France and in foreign locations;
- the training programme covering internal fraud risk in capital markets activities has been finalised. It targets employees in support and control functions as well as traders in the Equities division. These training sessions (group sessions, e-learning and off-site training for managers) have already commenced and will continue through the end of 2008;
- with regard to recruitment, job descriptions for new positions have been prepared and the recruitment process is being launched in the French market and in foreign locations (London, New York, Tokyo and Hong Kong). In addition, a targeted review of the remuneration scales for support and control functions was completed at the beginning of March 2008.

### Key success factors

The success of the Project requires significant additional personnel resources. In this respect, the 2008 hiring programme for support and control functions represents, in our view, a significant challenge. Its success will depend on the ability to find suitable, qualified candidates in France and foreign locations, particularly for supervisory positions.

Moreover, the integration of a large number of new recruits brings with it a risk of weakening an evolving structure that should not be underestimated.

Lastly, given the significant pressures which certain teams have been under in recent months, their continued mobilisation and commitment over the long term will be a key factor contributing to the success of the Project.

Over and above the actions planned for 2008, the targeted cultural change will take place over time and will result from the combined impact of several fundamental elements:

- an environment that fosters a sense of responsibility on the part of the players. In this regard, Project measures such as the development of strong control functions and the affirmation of shared values of professional ethics work towards meeting this objective;
- initiatives supporting these changes such as communication activities, training and awareness raising that aim to explain, convince and motivate and which require a consistent, continuous flow of messages at all levels of the organisation;
- the exemplary conduct of all supervisory staff and the embodiment in their every day actions of the messages put forward will act as a catalyst for the entire programme.



## Initiatives outside SG CIB

The major group functional departments are already involved in the Project's various workstreams and are represented in the governance structure that has been set up for the Remediation and Transformation Plans. Moreover:

- as part of the Remediation Plan, they are contributing to the implementation of controls within their scope of action. Thus, for example, the risk management function was involved in setting the limits for the nominal value controls;
- as part of the Transformation Plan, these functions take part in the discussions that will determine the scope of action of the new control functions.

Beyond the Project itself, in relation to their own working methods, these group functional departments have also launched initiatives aimed at strengthening existing procedures and extending the scope of certain controls.

### The risk management department

At the level of counterparty risk monitoring, we have been informed that an operating instruction specifying the roles and responsibilities of the various parties involved in the control has been modified in order to more systematically involve front office operators' supervisors as well as the risk management function.

In addition, a workstream has been launched to develop the current system for monitoring market limits which should serve to reduce the high number of cases observed where these limits were exceeded. In this context, the risk management department wants to be able to implement specific procedures for dealing more comprehensively with requests to modify these limits and for analysing the justifications provided for exceeding them. It is also expected that implementation of monitoring tools and indicators as well as an appropriate management of the escalation of red flags will help to measure the improvement in the efficiency of the global internal control framework.

This initiative is aligned with the messages concerning professional ethics circulated within SG CIB and supported by the roll out of a trading handbook which reaffirms the strict principle of complying with trading limits.

In addition to these measures, the Diagnostic review revealed the need to specify and formalise the roles of the risk management function in terms of monitoring both market and counterparty risks.

### The compliance department

To remediate the weaknesses brought to light through the Fraud, as described in the Diagnostic review, the procedure for responding to requests from regulators and exchanges was revised in April 2008 in order to specify the roles of the various parties and the need for formal validation of the information included in the responses. This validation will be provided by front office supervisors and, when judged appropriate, by those in charge of support and control functions.

The efficiency and the effective application of this new procedure cannot be immediately assessed, given the nature of the subjects covered. We recommend that these aspects be reviewed in 12 months, in the light of the first results of their practical application.

We also suggest that the compliance department reflects on the ways it will interact with the new cross-functional control structures and on the extent of control activities which are likely to be led by the compliance department.

## Periodic control functions

The periodic control functions are looking into ways of addressing the weaknesses observed during the Diagnostic review.

The procedure for following up on audit recommendations issued by the periodic control functions were revised in April 2008. The objective was to optimise the process for following up on the recommendations by providing a framework, with special treatment of the most critical recommendations.

In addition, at the SG CIB internal audit level, discussions are underway concerning extending the application of the most sensitive audit recommendations throughout SG CIB, should this prove relevant.

Since the effectiveness of these new measures cannot be judged immediately, we recommend that an assessment be made in one year, to include interactions with the new structure for the surveillance of transactions within SG CIB.

The discussions currently under way concerning the development of methods of supervision for the internal control system should enable the periodic control teams to obtain a better understanding of the totality of the risks represented by the activities.

These various developments tend towards a greater level of management engagement at different levels in the implementation of the recommendations and the improved reactivity of the internal control structures. We recommend that these developments should be complemented by more specific consideration on the part of the periodic control teams as to how to strengthen their role vis a vis the governance of the group.

# Summary of our analysis of the action plan

## A change programme with many challenges

Faced with the discovery of the Fraud, the Societe Generale response took the form of a major programme of change and reform. In the context of the Project, SG CIB formed the view that it was necessary to include all of its capital markets activities within the scope of the remediation measures.

The programme was designed to create a balance between the urgent need to improve the robustness of the system of internal controls and a willingness to invest in organisational structures and new forms of governance in order to provide the flexibility, the speed of response and the ability to read across the organisation, necessary for SG CIB's operations where transaction volumes can fluctuate significantly.

The relevance of the programme was reinforced by the inclusion of workstreams dealing with weaknesses which already existed within the organisation in the area of suspense items, unreconciled transactions and operations carried out manually. The scale of these items was such that the controls already in place may not have been fully effective in the past.

The programme also reflects a willingness to move towards a culture of shared responsibility and mutual respect. The design of the new system should lead to the creation of robust and independent control and support functions and should restore the balance between the various parties involved. In this respect, by bringing together all of the front office teams and the control and support functions in one ambitious undertaking, the Project represents the first step towards the cultural change which the Group is seeking.

We consider that, taken as a whole, the programme addresses the issues identified as a result of the Diagnostic review and it is of strategic importance for SG CIB. The matters which we have raised following the Diagnostic review are intended to assist the thinking of SG CIB in the implementation of the programme.

## The progress of the programme as at the end of April 2008

As at 30 April 2008, some three months after the discovery of the Fraud, the design phase of the programme is nearly complete. The Transformation Plan workstreams have been launched and a structure agreed for these. Detailed road maps are to be finalised by the end of June 2008. The execution phase has begun in parallel, particularly for the Remediation Plan, and this will continue for a period of two or three years.

The first results are already noticeable within the capital markets operations of SG CIB. In particular, we have noted the following:

- a heightened level of awareness of internal controls within the front office based on a clear definition of roles and responsibilities which have been formally acknowledged by the individuals concerned. A handbook for traders has been distributed and individual mandates are being rolled out;
- a clear acknowledgement of the separation of the roles of the front and middle offices. This has taken the form of the production of a handbook for the Middle Office Trading Support Unit and the introduction of an initiative intended to cancel traders' "write access" rights to middle office IT applications;
- the establishment, on the one hand, of a committee to review internal control procedures, and on the other, of a committee responsible for monitoring internal control alerts with a brief to bring together all of the parties involved in the operations processing chain in order to consider how this can be made more robust from an internal control standpoint;
- a programme intended to raise awareness of fraud risks and operational risks. This has already been rolled out to several hundred employees throughout SG CIB locations;
- the partial deployment of the Initial Ten Actions within the capital markets operations represents an initial measure to complement the system of internal controls. This deployment should enable the messages which have been communicated concerning operational risks to be put into practice.

In addition, certain procedures have already been reviewed and strengthened at the level of the major group functional departments.

As at 30 April 2008, we consider that the elements described above represent a first line of reinforcement for the internal control environment. In addition to this first line reinforcement, there will be a phased roll out of procedures designed to improve the operating effectiveness of the entire control framework.

On the basis of the timetable put together by SG CIB, we consider that 30 June 2008 represents an important initial deadline for the effective implementation of the first controls. The ability to meet this deadline will be an important milestone for the credibility of the roll out of this ambitious programme.

## Key success factors

The success of this programme will be measured in terms of three objectives: short term improvements in the efficiency of internal controls; the optimisation of the process put in place; and the ability to make the process sustainable by means of a number of more structural measures. Several key success factors need to be brought together by SG CIB in order to achieve these three objectives. These factors should be monitored vigilantly throughout the execution of the programme.

An in depth analysis of experience gained as well as the execution risks involved, should enable this project, which will mobilise several hundred people for a period of two to three years, to be anticipated and managed in the most effective manner possible.

In this regard, the progress made to date on the Initial Ten Actions of the Remediation Plan is a good illustration of the particular skill sets needed to implement this type of plan and the technical difficulties involved in deploying new measures in a complex organisation such as SG CIB. In this instance, it seems to us that SG CIB initially underestimated the extent of the work required. A more detailed analysis is necessary, taking into account the ability of the systems to produce the information required and SG CIB's own capacity constraints.

In addition, the Diagnostic review highlighted the need to simplify processes in order to enable the internal control system to operate as efficiently as possible. We consider that the ability of the SG CIB IT department to respond to the requirements of the Project will be a key factor in the overall success of the programme.

Even if the IT department was able to put in place measures to improve the treatment of user requests, it would still be appropriate to consider whether the IT architecture requires review in order to simplify and rationalise the information systems and ensure that, once the programme is complete, these systems are stable and robust enough to ensure that the internal control system is sustainable.

Finally, it is important to consider the need for additional resources. The programme depends on SG CIB being able to recruit in its market place and its ability to train and integrate experienced personnel. In this context:

- the strengthening of the teams which is necessary to ensure that operations are processed appropriately is, in itself, an issue for the programme as a whole;
- although there is a more limited requirement for senior people and for individuals with specialist skills, the ability to meet this need is critical to the successful roll out of the programme within the time frame which has been communicated.

Over and above the measures which are already anticipated, we consider that, in the context of this ambitious programme, a particular project management approach is required which should be delivered by means of a strengthened system of governance. In particular:

- a programme management structure is required which has sufficient authority to enable changes to the programme to be proposed, while also having sufficient resources to enable the status of the implementation to be precisely monitored and to ensure that relevant information is passed up to the general management levels of the Group;
- a supervisory structure is required with the direct involvement of general management in order to: allocate priorities between short term objectives and the medium term, more structural goals; provide an appropriate vision of the future; and ensure that the project remains coherent and that the outcome is consistent with the initial objectives and timetable. In this regard, a supervisory structure similar to that which has been put in place for the Transformation Plan element of the Project should be extended to the rest of the programme;
- a series of formal quarterly reviews to establish the progress of the Remediation Plan and, more generally the status of all of the actions. We consider that the output from these reviews should be a periodic progress report addressed to the Board of Directors.