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EWRM in Banks— How well understood!

“I had always assumed - I had no reasons to doubt - that our controls were in good shape and reflected management’s desire to run a very tight ship”

- John Dove, director of Barings

The collapse of Barings, Britain’s oldest merchant bank, and the billion-dollar losses suffered by Sumitomo Corporation catapulted the need for not only to have sound risk control into corporate consciousness, but for getting these tested through sound risk management system. But even before these spectacular losses, risk control had occupied the minds of those whose business it is to know - the regulators and the senior managers of the world’s leading financial institutions. They knew that sound internal risk control is essential to the prudent operation of a financial institution and in promoting stability of the financial system as a whole.

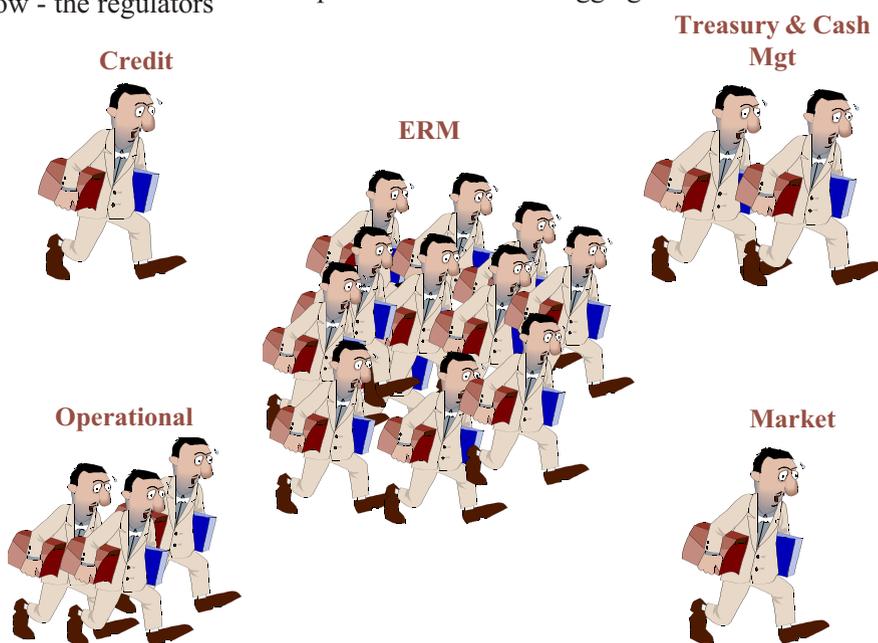


Kalyan Debnath

Risk Management is an evolutionary process where learning comes from within the organisation and from what the peers do. One issue that is quite evident in these stages of evolution for a better risk management system is the different approaches, level of thinking and understanding of what risk management meant to

an organisation. Although an organisation effectively works together, the level of consciousness in risk management across differing geographical or business lines can portray widely different expectations.

Indian banking system is at the very nascent stages of this evolutionary process. More often than not investment in risk management is triggered by regulatory compulsions than as a means to influence its policy, strategy and corporate governance process. Many of the intrinsic issues that govern risk management process are not well understood/internalised by senior management staff at many of the banks. Enterprise Risk management (ERM) is regarded more a literature than a mission to achieve. Result is looking at individual risk components than what on aggregate that means.



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Risk vs exposure and consequential limit management system

The terms “exposure” and “risk” are often used interchangeably, although they are not the same. Careless use of these terms can lead to lack of clarity in thinking about the risk management process. The following distinction may be helpful:

- Risk describes events which exist in the absolute, and does not say anything about the way in which a given market participant is affected by risk. Thus, for example, interest rate risk is indicative of the volatility in interest rates.
- Exposure describes relationship between market participant (i.e., the firm) and objective risk. Thus, for example, a firm, which has export sales should always be concerned about currency risk. However, if all of its export contracts are indexed, it has no exposure.

The primary categories of exposure to banks are:

(a) Committed/Contractual Exposures: This category is typically the easiest to define, as it is monitored and measured regularly through banks’ core activity like credit & resources mobilisation.



(b) Economic Exposures: Economic theory argues that exchange rates will, in the long run, adjust to reflect the relative rates of economic growth and inflation in two rele-

vant countries. Thus, for example, an exporter may be exposed to weakening of a particular currency in which it has sales. Its initial exposure is transaction-based but its longer term exposure may be an erosion of demand for its products.

Economic exposure, therefore, defines a range of market developments which are outside the control of the bank, but which can materially affect the risk profile of the portfolio and the return/loss that is expected.

(c) Strategic Exposures: Strategic exposures are defined in terms of business strategies of the bank.

(d) Anticipated Exposures: Anticipated exposures are those associated with projected or budgeted revenues / expenses which have a high probability of occurring.

Unfortunately in Indian banking scenario, very few banks can boast of having a risk inventory. Even, how many banks can be assertive enough to vouch that such an inventory represents an exhaustive list of risks that matter for the bank is doubtful.

(e) Contingent Exposures: Contingent exposures are a major source of risk, as the bank locks in certain revenue streams without the ability to lock in the associated costs.

All these categories are relevant for all types of market risk and many elements of credit and liquidity risk. The limit management system prevalent in banks in terms of various exposure limits (for market exposures and credit exposures) are hardly aligned to risk tolerance level, or designed to inject risk-taking ability, or tuned to enterprise-wide desirable risk-return trade off or backed by dynamic review of the limits. Thus, one lands up with following conflicting situations:

In a situation where it is desired to have conservative market risk exposures and accordingly market risk limits are tuned down, there are no corresponding effect on making certain credit risk exposure limits reflecting bank’s inclination for taking more risks. Enterprise-wide view is seen to be missing to a large extent.

The limits fixed in many places are not risk-based although aimed at containing risk. Risk appetite not being defined, these limits are not meaningful.

Similarly, the industry limits fixed are also not reflective of relative evaluation of the risks associated with the respective industries and banks credit expansion plan. The gap between what bank’s credit marketing plan indicates with those reflected in the limits when expressed in terms of additional exposures that can be taken, in many situation is huge and does not seem to reflect/ match with credit risk policy quite well.

Managing risk is about ensuring that the organisation moves as quickly as it can to achieve its objectives, while exposing itself to the level of risk that it is prepared to accept and capable of bearing. Obviously, reward does not come without risk. So the entire limit

management system should ensure that limits on dynamic basis balance the risk-return considerations based on risk appetite on the bank-wide scale.

Enterprise-Wide risk evaluation

The common belief is that three broad classes of risks, viz., Credit risks, market risks & operational risks, are what need to be addressed to ensure sound risk management system. Another dimension that has been added to reinforce such belief is BASEL-II imperatives for capital charge, which again considers the above three risk classes in isolation. **What is ignored is risk view in enterprise-wide context. It is not quite often understood that even if individual risks are well managed, that may not match with the risk profile of the bank.** Distinction between primary risks and collateral risks are quite often not realised. A credit decision might have been backed by well evaluated credit risks associated, but collateral risks connected thereto, like market risks, liquidity risks that the bank may be exposed to, if evaluated, may lead to different decision. The decision to have appropriate asset mix and product mix need not necessarily be mended by profit/yield considerations. Aggregated risk profile for the bank as a whole will be determinant of the desirable assets mix. Flexibility to switchover from market exposures to credit exposure or from less risky assets to riskier assets is possible when enterprise-wide risk evaluation system is in place. Risk aggregation, in that context, would mean not only aggregation of individual risk components, but it will also encompass integrated risk governance system, integrated limit management system and integrated risk monitoring process.

But fundamental questions that arises in this context are:

- Can we aggregate risks if we donot know what risks to aggregate;
- What do we do if we know what risks we are exposed to;
- Should we aggregate, ignoring individual risk treatment; and
- Does treatment of risks ensure risk management?

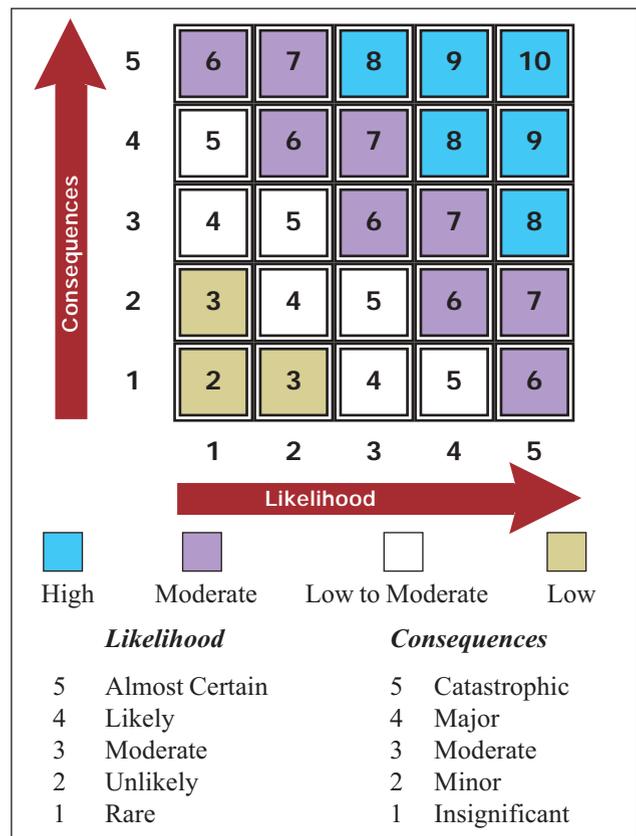
Pre-requisites of Enterprise-wide risk evaluation, therefore, encompass following processes:

- Risk identification
- Risk assessment
- Risk-control mapping
- Risk treatment

Unfortunately in Indian banking scenario, very few banks can boast of having a risk inventory. Even, how many banks can be assertive enough to vouch that such an inventory represent, exhaustive list of risks that matter for the bank is doubtful. Risks reside in business processes and so business process–activity mapping is a pre-requisite for risk identification. Again another pertinent question – how many banks have documented the processes? Most banks are comfortable with department-hierarchy based activities/ functions, which, if based upon, will not make risk identification comprehensive. The result can be detrimental to the interest of the bank as a low risk can be put to costly mitigation process, leaving a higher risk without being attended to. This calls for a systematic approach to identification and evaluation of risks. **The Fundamental principle is to evaluate risks on the basis of impact & likelihood of risks as the picture below indicates:**



Another dimension that has been added to reinforce such belief is BASEL-II imperatives for capital charge, which again considers the



Risk Treatment

Why do we evaluate the risks? Is it for deciding how much capital charge to make or for measuring the impact of the risks for taking appropriate actions? In the enterprise-wise context, the knowledge of risks should lead to deciding

How Much To Take & How Much Not to Take

Risk treatment process is an important step in risk measurement framework. The risks contained in the bank's principal activities, i.e., those involving its own balance sheet and its basic business of lending and borrowing, are not all borne by the bank itself. In many instances, the institution will eliminate or mitigate the financial risk associated with a transaction by proper business practices; in others, it will shift the



risk to other parties through a combination of pricing and product design. Risks facing all financial institutions can be segmented into four types, from a management perspective. These are:

- (i) risks that can be eliminated or avoided by simple business practices,
- (ii) risks that can be transferred to other participants,
- (iii) risks which can be mitigated by effective & efficient controls and,
- (iv) risks that must be actively managed at the firm level.

In the first of these cases, the practice of risk avoidance involves actions to reduce the chances of idiosyncratic losses from standard banking activity by eliminating risks that are superfluous to the institution's business purpose. Common risk avoidance practices here include at least three types of actions. The standardization of process, contracts and procedures to prevent inefficient or incorrect financial decisions is the first of these. The construction of portfolios that benefit from diversification across borrowers and that reduce the effects of any one loss experience is another. Finally, the implementation of incentive-compatible contracts with the institution's man-

agement to require that employees be held accountable is the third.

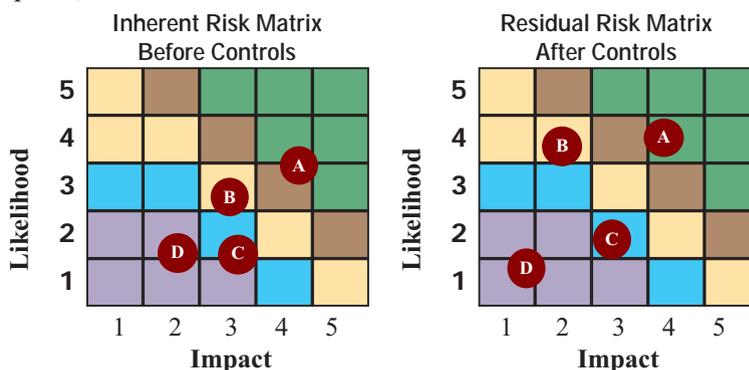
There are also some risks that can be eliminated, or at least substantially reduced through the technique of risk transfer. Finally, the bank can buy or sell financial claims to diversify or concentrate the risks that result in from servicing its client base. In the context of operational risks, insurance and contracting are the accepted mode of risk transfers.

Such a decision Making process hardly exist in banks in India.

Residual Risk & Risk Monitoring

Risk management initiative does not end in taking risk treatment decision. Once risk treatment decision is taken, the post treatment status of risks need to be evaluated, which in other words means knowing residual risk status. Monitoring action-taken for treatment of risks and residual risks status is one of the important objectives in ERM. If risks connected to interest rate volatility for debt instruments need to be treated, one can decide about some trigger value of bond prices, value beyond which will alert the dealers for taking smart trading steps. Accordingly, residual risk status would vary depending upon bond price movement. If the prices were above the trigger point, the residual risk status would indicate comfortable position. This can be well understood in the pictures below, where movement of the risk status after treatment dictate the risk profile of the bank.

In some situations, residual risk value may be low



when compared with the cost of controls. This could result in a commercial decision to reduce control effectiveness (ie. reduce control cost) with the subsequent rise in residual risk value. Conversely, the reverse can also be evaluated with additional spending to increase controls and therefore reduce residual risk value. For example

Root Cause	Risk Impact	Potential Loss	Probability	Control Effectiveness	Residual Risk Value
Inability to align services with customer needs	Damage to Image	4mln	100%	Weak (0.75)	3mln
Incomplete and fragmented planning and budgeting	Cost Over-runs	3mln	50%	Weak (0.50)	0.75mln
Inadequate systems functionality/continuity	Infrastructure Failure	5mln	25%	Weak (0.50)	0.625mln

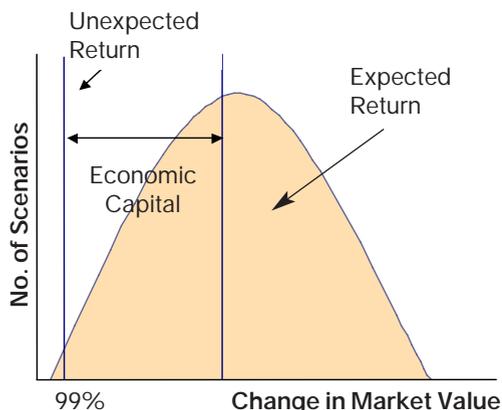
This process of risk monitoring through residual risk status is not conceived in banks in India. But this is an established process in ERM. Corporate dashboards are created through technology interface for providing C-level persons opportunity to monitor residual risk status so that they can keep track on movement of the risk status of some significant risks consequent upon treatment of the same. Banks in India are required to come of age.

Risk Governance & Risk Quantification

Much of the initiative has been taken for ensuring risk governance through various risk committees, risk policies, bringing independence between risk taking units & risk monitors etc. But risk governance has not been elevated to the desired extent, partly because of compliance-oriented approach and partly because Board of Directors is yet to be concerned about risk governance the way they are about corporate governance.

The extent of differences in risk quantification across risks of different types is quite striking. Besides, not many banks have tested their credit rating framework to find out whether various rating grades provide distinct PD & LGD grades so as to use the rating migration for credit risk modelling. Interest rate risk is measured, usually weekly, using on- and off-

balance sheet exposure. The position is sometimes reported in re-pricing terms, using gap, as well as in terms of duration (for some banks), but the real analysis is hardly conducted with the benefit of simulation techniques. Foreign exchange or general trading risk is monitored in real time with strict limits and accountability in most of the cases. Here again, how far the effects of adverse rate movements are analyzed by simulation using ad hoc exchange rate variations, and/or distributions constructed from historical outcomes or through anticipated macro-economic factors remains to be seen. Liquidity risk, on the other hand, more often than not, is dealt with through ALM reporting. But not many banks use that as a planning exercise or analyze the funding effect of adverse news. On operational risk front, not many banks have initiated the process of loss event tracking and create appropriate database for the same. Whosoever has done so, the effectiveness needs to be tested, as in the absence of identification of Key Risk Indicators (KRI) and without deciding the risk quantification model, where loss event data will get filtered into, the effort may not yield the desired result.



At the enterprise-Wide level, risk quantification would mean risk aggregation so as to make capital allocation and manage exposures pro-actively. It also facilitates risk pricing across product line. Going beyond the regulatory capital and creating economic capital by way of allocation for expected loss and unexpected loss is what the ultimate aim of ERM should be. There are two broad approaches for the same. The first of these, pioneered by Bankers Trust, is the RAROC system of risk analysis. In this approach,

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risk is measured in terms of variability of outcomes. By dimensioning all risk in terms of loss distributions, and allocating capital by the volatility of the proposed activity, risk is aggregated and priced in one and the same exercise. A second approach is similar to the RAROC, but depends less on a capital allocation scheme and more on cash flow or earnings effects of the implied risky position. This is referred to as the Earnings at Risk (EaR) methodology, when employed

to analyze interest rate risk. When market values are used, the approach becomes identical to the VaR methodology, employed for trading exposure. This method can be used to analyze total firm-level risk in a similar manner to the RAROC system. If EaR is used, it is cash flow based, rather than market value driven.

There has been much discussion of the RAROC and VaR methodologies as an approach to capture total risk management. Yet, frequently, the decisions to accept risk and the pricing of the risky position are separated from risk analysis. If aggregate risk is to be controlled, these parts of the process need to be integrated better within the banking firm. There are some problems for use of the methodology when market prices are not readily available for some assets. Yet, thus far no bank has tried to address this issue adequately. Finally, operating such a complex management system requires a significant knowledge of the risks considered and the approaches used to measure them. It is inconceivable that Boards of Directors and even most senior managers have the level of expertise necessary to operate the evolving system.

Significant gaps in areas that can trigger faster evolution

The issues that need to be addressed in terms of preparedness by the banks to trigger faster transition are:

Sl. No.	Issues to be addressed	Bank level preparedness
1.	Economic capital for unexpected loss is one of the major goals of enterprise-wide risk management system. Banks need to have a system to estimate unexpected losses.	Banks may not be ready yet to compute unexpected losses. One of the major reasons is the lack in terms of having risk inventory at the enterprise-wide level and identifying key risk indicators (KRI). KRIs facilitate tracking corresponding loss events. There are good analytical tools available that can direct the banks to put a process for unexpected loss estimation.
2.	Credit Risks : Basel-II requirement: Banks are required to estimate PD & LGD if they want to migrate towards advanced IRB approach, which gives plenty of flexibility to the banks. Estimation of PD & LGD requires well-tested credit rating framework, adequate credit risk differentiation through rating grades, analysis of rating migration, very good credit database to capture rating transitions as well as for credit portfolio risk evaluation and tested methodology to estimate PD & LGD using the database.	Some banks have started the process of computation of PD & LGD. But what remains to be ensured is whether the existing credit rating framework is sound enough to consider the estimates as reflective of PD & LGD for the corresponding assets quality. Back testing of the CRF and the capability of the same to make discrimination of rating grades to conform to the standards required for PD & LGD estimate have not been done at many banks.

	<p><i>Prudent CRM requirement:</i> Since BASEL-II has provided incentive to banks having sound risk management practices. Banks are required to activate themselves to develop practices that are beyond regulatory directives. BASEL guidelines have propounded certain principles for enabling the banks to elevate themselves. In terms of CRM, globally various statistical models have been evolved which are being used as portfolio risk models, for quantifying credit risks. These models besides providing scope for developing strategies for credit risk monitoring, facilitate calculation of expected & unexpected loss.</p>	<p>Many banks are not yet temperamentally equipped to reach the sophistication called for in such models. Essential requirement is faster transition from legacy based credit monitoring system towards credit risk monitoring system. A few banks are trying to understand the mechanics of these models and have initiated the process of equipping the people to improvise these for their own requirement.</p>
<p>3.</p>	<p>Market Risks : For expected loss estimation, RBI has already advised banks to create Investment Fluctuation Reserves. Internationally VaR based models have been developed for estimation of expected loss.</p> <p>For unexpected losses, statistical models are in use by global investment bankers. Using forecasting techniques on the basis of macro-economic factors are considered the basic requirement for market risk estimation.</p>	<p>VaR based limits are operational in most banks. Unfortunately there is a mis-conception of equating market risk management with maintaining exposures within various market based limits set up by banks. Portfolio level risk diversification, portfolio balancing and corresponding portfolio risk quantification have not reached the desired level of sophistication. Market risk being huge in the banks in India, the banks are required to prepare themselves for bringing sophistication in the area of market risks on an urgent note.</p>
<p>4.</p>	<p>Operational Risks : All the operational risks may not be quantified. So, the first stage of operational risks is identification & assessment of operational risks that banks are exposed to followed by finding out KRIs for such risks. Ones for which KRI is identifiable can be put through some measurement models.</p> <p>The next step would be to identify loss, event for all such KRI and create a database for tracking loss events. Estimated period of loss event would for five to seven years before meaningful risk models can be developed & used for operational risk capital .</p>	<p>Many banks do not have inventory of operational risks. Some banks confuse the risks identified for RBIA as operational risks. Some banks consider broad risk clusters like people risk, technology risk, strategic risk as their risk inventory. As a result, ORM has not picked up in right earnest.</p> <p>Some banks have started loss event tracking. But the absence of articulation of risks would not result in loss event tracking pro-active. Quite often, these losses are actual losses accounted for or identified. But identifying loss events than the losses are what is expected. ORM quantification will not achieve any degree of acceptance unless loss events are identified properly.</p>
<p>5.</p>	<p>Aggregation of Risks : BASEL-II based capital charge considers aggregation of these three risk categories for maintaining capital charge on the aggregate. While it has provided for risk modelling at individual level to facilitate</p>	<p>Aggregation of risks is somewhat quite new to banks in India. While some banks have started thinking in that line by trying to put integrated limits framework and integrated risk policies as well as using CBS solutions for technological integration, the effort required is beyond such requirement. Risk aggregation would mean aggregating the individual risk measures</p>

THEME

6.	<p>computation of risk weights, aggregation is what will be desirable to provide for economic capital.</p>	<p>through a common framework so that bank can finetune each of the individual measures to decide most appropriate assets class that would contain the risk to the desired level dictated by risk appetite. Capital allocation (about how much) would be based on such strategies. Most banks are yet to conceptualise the same in their processes.</p>
6.	<p>Risk Based Supervision Banks have been asked by RBI that henceforth RBI supervision on banks would be risk based. To that effect, RBI has issued guidance note to banks and started the process of RBS for selected banks. The important facet of such supervision is two fold: -Banks with better risk profile will be subjected to lesser supervisory interference -The risk management processes, system, frameworks & risk models will be tested for supervisory approval so that banks can be allowed to adopt higher approach for risk quantification under Pillar I.</p>	<p>Only a few banks have been put through initial supervision under RBS. RBI is yet to come out with the desired level of sophistication under RBS. This makes sense for lead banks to prepare thoroughly with very good risk management system, process, models and frameworks with an enterprise-wide view. Some banks have already started looking at the same pro-actively, while majority are still trying to improve individual segments (CR, MR, OR). The result will be poorer RBS results and delayed BASEL-II responses.</p>
7.	<p>RBIA Risk based internal audit (RBIA) system for banks is another cornerstone of Pillar-II requirement. While RBS is what RBI will look for while inspecting banks, RBIA aims at radically reforming existing inspection format for branches/ offices towards risk based audit.</p>	<p>While most banks are trying to migrate gradually towards RBIA, it appears that the process is rather slow and radical reform in the inspection environment is quite missing. There are misconceptions about the process itself. In many banks, the process of preparation of an audit plan is not preceded by thorough risk assessment and the concept of audit prioritisation for appropriate resource allocation is not understood. In many banks, RBIA is still a format driven exercise. Inspectors are not equipped to do process audit and provide suggestions for process improvement.</p>
8.	<p>Risk management processes Banks need to improve risk management processes, systems and internal control mechanism so that risks-control system in the bank is upto the desired standard. RBI supervisory interferences under Pillar-II will cover extensive ground under these areas. Banks will loose in terms of flexibility under Pillar-I, if RBI observation on these reflect inferior quality.</p>	<p>There are plenty of gaps on these scores. Risk reporting & risk monitoring system have not been rooted deeply in the banks. Some of the frameworks that are used for risk profiling like CRF, early warning signal, VaR etc. have not been tested for quality check to see whether these really reflect the risk profile. Many banks have not yet decided which BASEL approach they would target so that the entire process is synchronised. Even on the process side, there are plenty of gaps from risk management angle. Various risk management issues that significantly impact many of the sub-processes of individual risk components are not addressed and respective process owners seem also not convinced about reforms in the processes to break the legacy. There appears to be conflict about the roles in terms of taking risks and managing risks. the matter assume serious proportion in terms of mid-office function in market risks. In many places, mid-office is not equipped to carry out independent risk analysis on a pro-active basis and the market risk management process does not put mid-office function to the scale it is desired.</p>