The Governance of the Operational Risk Indicators

Angelica Stratulat
angelica.stratulat@yahoo.com

Monica Susanu
susanu_mnc@yahoo.com

Dunarea de Jos University of Galati, Romania

Management has won much its status of science as it is the scientific approach of solving many problems that the leadership of any entity currently has and, as such, it continues to fuel many controversies and debates. Management is the process meant to coordinate, to plan and to control the activities in an organization so as it is able to ensure its goals with maximum efficiency. Under these circumstances, future uncertainties and risks cause revolutionary mutations in approaching most of the economic and social paradigms that humankind were too long accustomed to, so that also the management processes and procedures system is exposed to corresponding changes. Operational Risk Management is not an integrated process but rather a set of fragmented activities that treat and resolve a variety of risks facing the firm/company as a whole, which determines facing the process from a holistic perspective of the whole business.

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Introduction – Management Essentials

Equally responsible and productive, management is an activity which, by definition, is both a physical and mental work that requires great expertise and specific instruments of work and also uses certain characteristic techniques and procedures.

Based upon theoretical and practical reasons, the management process as a category which characterizes the entire complex and complete management system, reflect the temporal parameters of the management of any entity and also its components in terms of its development and change in space.

Incidentally, in full explosion and rapid expansion of the IT technologies communication and operation, the temporal parameters gained both in weight and importance, thus requiring more detailed and from multiple perspectives study of the management process.

Management process has a set of features that reflect the temporal component and the psychosocial participants’ profile involved in the organizational management.

♦ **Dynamism** is given by the continuously changing directions, and scalability issues in which the management process is accomplished. Cooperation between the various stages and operations is dynamic, because the management process involves the cooperation between different managerial links and the ability to anchor the new problems and to use new and adequate instruments and methods.

♦ **Stability** means constant use of certain channels, in this case – those that serve to setting its structurally natural base according to outline conceived by the organizational acts and as a systematizing factor for the management process.

♦ **Continuity** is manifested depending both on the level at which the management is exerted and on the organization’s particularities. Specifically, it is typical to achieve consistency all its stages: the purpose, situation, problem, decision. Each of these phases is mandatory and has a major role in the effectiveness of the entire management entity.

♦ **Cyclicality** is the very corollary of the whole process and points out that when every influencing act ends at a certain moment and that the system moves to a new status, which requires a new goal to be set, or perhaps just a correction or an addition to the previous aim and whose accomplishment needs a new or influencing act to be developed.

The psycho-social component of the entire management process is no less important and it highlights the participants’ mood, their motivation, habits and even their thinking stereotypes.
Participation appears as a conscious, legal and psychological commitment which involves permanent and organized concern in the management process.

Organizational management studies the management processes and relationship aiming at discovering the regularities and principles that govern them, so that new systems and methods should be designed afterwards, new techniques of management should be reformed, leading to obtaining, maintaining and increasing the firm’s competitiveness.

Starting from the nature of the assumed tasks and considering how they would be achieved, the process can share the managerial functions or attributes. Even nowadays, literature and practice remain tributary to H. Fayol’s work, despite the subsequent numerous specialists’ interventions. Their induced contribution or nuances largely left these features the same content.

Cyclicality remains usually the premises of the management process. In achieving each cycle, the manager is required to perform certain operations in a specific sequence and consistent with this sequence. Each managerial process is divided into several steps that are needed to succeed with a particular order.

Management functions are defined according to the content of the operations which are carried out at every stage and at this time of the discourse, an appeal to the theoretic substrate of a holistic vision is necessary, precisely because it imposes approaching the operational risk management.

**Prediction function** brings together work processes which determine the main objectives of the organization, and its components, as well as the mainly necessary means to achieve them.

Prediction answers the question about what should and can be done within the organization, under the specific conditions and also designating the necessary resources, simultaneously. The objectives should reflect the specificity of the organization, must be measurable and realistic. The results are divided into forecast, plans or programs, depending on the time horizon, level of detail and obligation to be accomplished.

**Organizing function** means all the management processes that establish and limit the physical and mental work processes, their components and grouping into certain positions, labor formations or departments, assigning certain and appropriate economic, technical or social managerial staff’s criteria, in order to achieve the forecasted targets.

Organizing answers the questions about who and how contributes to the organization's objectives, thereby combining human resources with those material, informational and financial, at the level of the simplest jobs, through the departments and up to the organization as a whole.

**Coordinating function** materializes in all the efforts for harmonizing the decisions and actions within the previously established framework of the organizational management system.

It is a “dynamical organizing” whose necessity, on the one hand, clearly results from the dynamism of the organization itself and also from its business environment which might be impossible to be fully reflected in the organizational system’s forecasts, and, on the other hand, from the complexity, diversity and even novelty of the feedback-type reactions, able to ensure appropriate operational decisions and also the interdependence of the implemented actions.

Certainly, an appropriate communication at all the levels of the management is the necessary prerequisite for an effective coordination, but an effective communication depends on a number of factors reflecting both the quality of management – the realism of the objectives, the managers’ level of training and their performances, their interest and involvement in solving the problems and also their responsiveness to new. Both coordination forms are important: the *bilateral* one – which runs between the manager and subordinate, as well as the *multilateral* one – which is a process involving the simultaneous communication between a manager and several subordinates, a method that is widely used in meetings.

**Drive function** incorporates all the working processes which determine the organization’s staff to set and achieve the forecasted targets considering the motivating factors.

This function answers the question about the reason why the organization’s staff participates in setting and achieving the objectives as established. The foundation of the drive function is the motivating drive, meaning correlating the staff’s needs and interests with the objectives and tasks assigned.

The motivation could be positive or negative, depending on how satisfactory are staff’s results and on what ground were they achieved. Scientific management feature is designing the motivation and hence the drive on motivational scales, i.e. taking into account the interest of the organization’s constituents, their needs, ordered according to the sequence that they should be considered.

**Control and evaluation function** can be defined as a set of processes by which the performance of the organization, of its subsystems and components are measured and compared with
the initially set goals and standards, in order to eliminate the deficiencies and ensuring the integration of the positive deviations.

This feature answers the question about what results has concluded the work, as the evaluation closes the whole cycle of the process management, and also forecasting new goals or conducting to reorganizations. The control & evaluation function must have a highly preventive character, as to prevent the possible deficiencies and to correct them when occurred. The control & evaluation processes involve measuring the achievements, comparing them with the objectives and standards which were initially set, highlighting the deviations, determining the causes that generated them and therefore, making the necessary corrections, as much as possible, including also upon the causes that generated the negative deviations.

Stagnant control & evaluation disappeared in the modern organizations, being replaced by an assessment based on the analysis of cause-effect relationships, an active control that leads to effective decisions and actions of management.

Risk management – a vital pillar in bank management

As an overall shape that a company describes its future, the concept of risk must be distinguished from the concept of danger, because whereas the risk shows a loss caused by someone’s decision, the danger shows the possibility of losses caused by indecision.

Given the overcrowding and interdependencies between different types of risk, efforts for the risk management and also for improving bank performance increased and diversified. Therefore and for many several reasons, the current era is rightly surnamed as the era of the risk management:

- the banking and financial systems continue to be exposed and vulnerable to the inherent risks and uncertainties which are specific for the financial transactions;
- the lenders still rely on incomplete or distorted information;
- the valuation of the assets continues to be uncertain;
- the new tools and players induce both uncertainty and risk, and frequently,
- the banks still manifest breaches in their precautionary strategies.

During their activity, banks are subject to a variety of risks, which can be categorized variously, according to the origin and the purpose of the assessment, mitigation and prevention.

Basically, there are two broad groups of risks:

a) Pure risks, meaning significant losses for a bank if not properly anticipated and managed; this includes also the potential loss of liquidity, solvency risks and the like, most often associated with the actions of lending.

b) Exogenous or speculative risks, that are the losses caused by incorrect or inappropriate expectations usually based on financial arbitrage; this includes currency risk, the price or market position risk and all the potential losses caused by or resulting from the fluctuations interest rate generally.

Any performing banking strategy should cover those programs and procedures for risk management, actually aimed at minimizing the probability of occurring such potential bank exposure risks, against the background of another economic principle, namely, that of maximizing the profit.

As a general rule, bank management objectives are designed to maximize the profitability, to minimize the exposure to risk and also to comply with the applicable regulations. An effective management of the risk that threatens a bank put its mark on the public image of that bank.

Banking risk management – methodology and logics

In the management of the bank risks, the known literature recommends a methodological procedure in the following four steps:

a) Identifying and analyzing the risk – working to identify the risks becomes very important; some risks seem obvious to everyone, while others can not be identified, in spite of the taken precautions, until they simply appear and cause serious losses. Therefore, extreme caution is recommended to identify any possible risk up to the maximum limit of unidentified risks. Businesses are not static problems, meaning that in certain time the data change and thus determine new types of risk.

Changes in banking services and products have increased the necessity for such an analysis. Any new product or service requires a new procedure in detecting and anticipating new risks. Risk analysis is continuous, it never ends, and it is as continuous as the changes in the banking transactions are. Risk management process begins by deciphering the risk profile of different range of banking products for major banking activities. Then they should be compared with the bank’s risk profile.
If the bank’s risk profile is less bold than the identified risk profiles, the banking conglomerate has a synergistic value which is positive for the shareholders.

Correlated with the annual management report and other accounting reports, organizational frame of the bank can be greatly helpful in establishing the departments that can increase the bank’s exposure to risk and therefore, these departments have the task of analyzing the types of the involved risk and of determining their treatment consequently.

Analyzing the financial records may lead to discover the risk even after its appearance, while the permanently open communications between bank departments and which may expose the bank to risk, may lead to the detection of the risk even before they become a reality.

b) The control and elimination of risks – As the risk is identified, a second phase may proceed, consisting in eliminating or controlling the risk as much as possible.

Usually, the best time to trigger the risk control is when launching an action, such as certain and carefully negotiated contract provisions, the most accurate time for mastering many and various risks.

Additionally, the risk control is both individual and permanent task that takes place within each bank, but it is also ensured by the central bank, through its specialized supervisory departments. The departments which are involved ought to check:
1. the right time and the legal form the guarantees were established;
2. the compliance of the agreement with the contract with the legal limits of the amount and duration of repayment;
3. certain incidents both for their own client’s payments due to others and for the current payments between different bank’s customers.

Regularly, when banks reject applications for the lack of coverage, these are usually reported to the central banks. This is enabled to issue rules for governing the risk exposure and thereby, it controls the financial units and the commercial banks.

c) Assuming the risk – Although the bankers are familiar with day-to-day activity of granting loans, they are definitely reluctant to wholly or partially accidental risks. But when it really comes, this ought to be well-based on information and a conscious assumption. However, unconscious assumption of the risk may happen, but it is usually caused because that risk might be overlooked or simply unidentified. So, the identification of all possible sort of risks is of an utmost importance and they may result from the thorough analysis of a wide variety of indicators.

d) Transferring the risk – the insurance policy is frequently considered a proper tool for transferring the risk as many banks do, as well as other forms and means added for the same purpose. Referring to the risk management, it should be more widely understood as an action plan, but also as certain persons specially enabled and responsible for the identifying and monitoring the large diversity of risks.

The size of the bank crucially determines the manner of understanding, and thus – conceiving and organizing such a specialized department, because there are logical differences between a smaller, middle and a large bank in the way that the risk management might be organized. This issue must be also related to the staff’s adequacy according to the tasks that it should assume and solve.

The staff’s components must be seriously taken into account, because it specifically indicates the level of the risk to which each bank might be exposed. From the moment in which the concept of risk management is accepted by the bank’s specialized department, the related procedure should be settled as to underlying this activity and the responsible persons in charge, with a view to eliminating the accidental misunderstandings with other levels of management. Such a system should not be rigid; it should allow better adapting to the ever new conditions on the market.

A complete system of lending rules is usually in force at the level of each bank, and, in addition to the lending conditions, these rules also regulates the maximum risks to which the bank might be exposed both to a borrower or a group of borrowers.

Generally, the banking policy ought to meet the following requirements simultaneously:

► the bank must be protected against the accrual losses in any financial year that could significantly affect its assets or income,

and

► the total cost of the risk should be always kept to a minimum.

The recent financial turmoil raised the question whether the grading / rating marks do reflected the true risk, especially in light of the situation on the US mortgage market.
Findings, Discussions, Practices

Each bank’s own risk management is structurally organized depending on the bank size and on the size and range of the services which are offered to its customers. Actually, the bank’s future security itself depends on this department.

Banks do not sell explicitly on commission many of the offered services, so that their value must be considered by comparing the interest rates on loans and deposits as a measure of the opportunity cost of that capital. Moreover, the recent theoretical work showed that risk taking is not a productive service itself. Instead, the determination of lending to customers and the risk assessment could be a real productive activity that truly requires capital, labor, and costs of intermediation.

Bearing the risk through holdings the bonds or the treasury bills is not a productive activity for those banks and hence, the whole systemic risk on the bank loans and deposits should also be excluded from the banking final production.

Therefore, it is necessary to assess the value and necessity of that credit from a customer perspective and assuming the risk in this particular case is really productive, as it requires work, money and other intermediate inputs.

Bearing the risk through holding bonds or firms’ capital can not be considered a productive service and as such, the systemic risk related to loans or bank deposits should not be included in the category of a bank’s production.

Therefore, it is crucial to align the banks’ reference interest and in this prospective the impact of this choice is substantial as the empirical research demonstrates that as well. The Bank considers that its exposure to risk could be its prerequisite for profitability on the banking market.

Under these circumstances, by all means it should act to minimize its exposure to risk, while maintaining the profitability that would ensure a strong market position; from the managements’ point of view, it means new and sophisticated forms and methods of monitoring and preventing also new and insidious future.

As noted in many works of the financial literature, in the period that immediately followed the launching of the Eurozone, the general trend was the launch a tough competition in the banking sector and also a thorough control and more appropriate supervision in assuming the risks related to capital requirements.

The European banking market has become very integrated in the decades before the 2007 credit crisis. The two twin forces of deregulation and technologies have greatly contributed to the gradual process of financial integration and also they increased the competition in the financial services industry.

As a result of this process, it has been a spectacular increase in the importance and high efficiency of the banking sector. This has led banks to operate with greater attention to the good practices or to their productive function.

Increased competition could also lead to a greater, even excessive tendency to taking over the risks, largely because the increased competition reduces market power of banks as a rule, and hence, their value of their charter value.

It can be concluded that banks with a solid capital would tend to further capitalize more on the future, and therefore they could get efficiency, meaning positive scores and results.

In the recent years, the analysis of the evaluation of the financial stress currently faced by the banks under controversial circumstances is of utmost interest. There is already a comprehensive literature attempting to commensurate as accurate as possible the stress that banks might perceive under the threat of a growing multitude of diverse risks.

Specialists’ works from the European Central Bank are worth to be mentioned for their efforts to develop an indicator measuring financial stress (FSI) in the euro area, an improved formula of a previously proposed indicator by USA in 2006. Based on a wider area of data consisting of individual variables, the new indicator would estimate the bank’s performance as well, recorded under the conditions that recently adopted measures might alter the results. This new indicator ought to point out the stress in an optimum time and with high accuracy, avoiding any false alarms. The indicator is meant to detect and distinguish the stress in the turbulent periods from the quiet ones and can be used to:

a) evaluate the current state of financial markets in the euro area in due time, so as to provide snapshots of these markets, and to

b) relate its data with other information signals obtained from models or other sources.

FSI indicator can be used both to assess the situation in real time and to interact with other models in a more formal way. Moreover, it is a fact that from time to time, rare events may occur, and
their measurement could be less than satisfactory. The bank's strategy envisages the accepting of the individual risk or the accumulation of risks that can not be measured (calculated) or whose final incidence could jeopardize the bank's market position putting into question even that bank's very existence.

However, in the context of these requirements, a bank may assume a certain risk if:
1. the exposure can provide an adequate profit to that risk;
2. any losses may be incurred in the profit, without devastating effects which could influence the situation of that year;
3. the losses could be covered by the previously-made provisions, and if
4. the activity for which that risk has been assumed were becoming bankrupt, that risk may occur in a normal banking activity, so that the produced loss would not affect the bank's image both internally nor externally, and thus, the bank will take risks for specific banking activities only.

Based on alternative namely subordinated plans, bank has an alternative also in applying the measures that could increase its independency against the large sources of funding. Moreover, it can be considered a permanent objective of the bank's management in the context that there are many risks that may affect various items in their balance sheet.

Among the main risk categories that (any) bank may face is:
- liquidity risk;
- credit risk;
- interest rate risk;
- capital risk;
- currency risk.

Last few years banking policies greatly supported these strategic objectives, and the rules and procedures followed by the leadership of any bank, their defense against the risks is significantly strengthened. As a rule, the risk management would be organized in those directions in which those risks could be assumed, and the general activity for the risk management is led by a specialized agency at the central bank directly.

One of the bank's instruments used to monitor the above mentioned risks is represented by the plans and forecasts that any bank develops, for example, the foundation for its assets could correspond with its current liabilities, meaning that the current assets could meet the current liabilities.

Changes that may occur in the interest rate, under the economic volatility or in the interest rate structural fluctuations are also included in the different tools any bank can use to protect against any possible risk.

**Key Risk Indicators' Role in Operational Risk Management and Measurement**

**A. Fundamentals of the KRI**s' (Key Risk Indicators) Programme

In general, the management of the credit risk is the basis of the vast majority of banks' survival.

The credit risk can be defined as the risk that the interest rate, credit or both might not be repaid on maturity or be partially reimbursed. This risk is specific for those banks whose important function in the economy is lending.

In comparison with other operational risk management and measurement tools such as loss data (internal, public and consortium), risk-and-control assessments, capital allocation and performance measurement, **key risk indicators** (KRI) remain one of the out-standing action items on most firms’ to-do lists, along with scenario analysis. KRI is measurable metrics or indicators that track exposure or loss. Anything that can perform this function may be considered a risk indicator. In operational risk, we are interested in KRI that monitor operational risk.

Operational risk can be defined as the risk of loss resulting from inadequate or failed processes, systems, human performance or external events.

The number of customer complaints is an example of a **risk** indicator. As customer complaints increase, the probability that there are some underlying and potentially systemic mistakes and errors of judgement being made is likely to rise. In other words, there is a rationale for thinking that, at least in some ranges; changes in the value of this indicator are likely to be associated with changes in operational risk exposure or operational loss experience.
B. – Uses for KRIIs – Financial institutions are interested in KRII programmes for many reasons. The highest priority of this Programme objective is to use KRIIs to report risk profiles to senior management. The next-highest objectives were to create a no-surprise environment and to integrate risk management and measurement effectively. If KRIIs are focused on the areas of most significant risk, then they should provide managers with reasonably clear direction as to what levers to pull to reduce exposure, as well as quick feedback on their effectiveness.

The most popular objectives are to aggregate, analyse and report risk profile changes at the corporate level and to report control performance at the business-unit level. Also, most organisations intend or already use KRIIs with specific thresholds that trigger intervention or escalation.

C. – Value of a common language and structure for KRIIs –

KRIIs are not new, but they are very topical at the moment, being widely viewed as having the potential to make operational risk management a more effective discipline. Financial services regulators in particular have expressed interest in KRIIs as a potentially important tool to manage operational risk. To achieve this, some standardization is required across the firm and, ideally, across the financial services industry, in terms of both language and approach to KRII implementation. The first step in standardization should be use of a common language around risks, business activities and products or business lines.

Benefits to the firm in developing this kind of common understanding include:

- permitting indicators to be related to specific risks in a clear and consistent way;
- permitting alignment of internal and external loss data, risk-and-control assessment results, capital and scenario analysis with KRII data for much more powerful management information and operational risk management reporting capabilities;
- reducing confusion when it comes to ensuring robust, complete coverage of all risks, be it for self-assessment, KRIIs or collection and classification of loss data; and
- with the use of common KRI definitions, both internal and external benchmarking becomes much easier.

So, if one can agree that there is great potential business value for a KRII programme, particularly if it is implemented in a systematic way across the organization, with a common language and structure, some of the fundamentals in getting such a programme follow below.

D. – Properties of a good indicator –

Key to the effectiveness of any KRII programme is the quality of the KRIIs themselves. Given the inherent subjectivity implicit in most KRII programmes, there is a strong case for establishing a framework for assessing effectiveness.

**Effectiveness** - Indicators should:

- apply to at least one specific risk and one business function or activity;
- be measurable at specific points in time;
- reflect objective measurement rather than subjective judgement;
- track at least one aspect of the loss profile or event history, such as frequency, average severity, cumulative loss or near-miss rates; and
- provide useful management information

**Comparability** - Indicators should:

- be quantified as an amount, a percentage, or a ratio;
- be a reasonably precise and definite quantity;
- have values that are comparable over time;
- be comparable internally across businesses;
- be reported with primary values and be meaningful without interpretation to some more subjective measure;
- be auditable; and
- be identified as comparable across organisations (if in fact they are)

**Ease of use** - Indicators should:

- be available reliably on a timely basis;
- be cost-effective to collect; and
- be readily understood and communicated

The ideal features of KRIIs are that they are effective in tracking the risk, they are comparable within and outside the organisation and they are practical and easy to use. Indicators can be leading,
lagging or current in nature. Most managers want leading or preventative indicators – to predict problems far enough in advance to prevent or eliminate them or at least mitigate the damage.

Unfortunately, prevention of incidents is a desired but rarely achieved forward-looking aspect of operational risk management, because, context is everything. It is usually beneficial to know the underlying trend of an indicator, as well as to look at it in the context of other KRIs and other management information, in order to really understand the story the numbers are suggesting.

E. – KRI selection

Having a good understanding of the desirable characteristics of a KRI, they must be selected and bundled into a programme for a business area or unit or the organisation overall. They can then be filtered and aggregated for reporting to more senior management. Accordingly, the construction of a KRI programme ideally starts with an individual business unit.

Because KRIs are supposed to track key risks, the first step in KRI selection is to identify areas of highest risk for the business unit in question. It is important to have a consistent and comprehensive approach to this analysis. It can be done by risk mapping or profiling each business unit, or leveraging risk-and-control assessment programmes already in place.

Usually, it is helpful to ask the managers to focus on the expected loss in the worst year over an understandable time horizon, for example, 10 years - this captures the effect of a typical economic cycle on risks, is reasonably easy for most participants to conceptualise and embraces the time horizon of most strategic initiatives and the majority of banking obligations.

Generally, the good practice requires that assessments should include the impact of reputation damage as well, as these are real impacts to the organisation, if a little harder to quantify. In order to keep the number of KRIs being monitored to a manageable number, it will be necessary to select the few that best reflect the business unit’s collective understanding of the key causes of each potential problem.

This is an art rather than a science at the moment, but, in the hands of experienced practitioners in the business, should represent a reasonable start. Of course, fine-tuning the KRIs will naturally occur over time as the business learns and gains experience with these relationships.

The next step is to establish bands of acceptance that essentially codify risk appetite, and triggers for escalation and/or some other form of action. Indicators are then assessed on an ongoing basis against this frame of reference. Thresholds and escalation triggers are an important risk management tool.

Managers will become more experienced at setting the appropriate level of threshold over time.

Concerning a reasonable number of KRIs, many financial institutions have a very large number.

It is very important to have an appropriate strategy for reporting and aggregating KRIs to senior management and the board. Key elements of a robust structure for KRI aggregation and reporting are:

- clear objectives for the reporting and aggregation mechanism;
- common data dimensions and classification;
- content appropriate to the required level of analysis and decision making; and
- timeliness and accuracy to the required level of materiality.

There is a clear difference between data and management information. Data can be fairly "raw" and of little or no use to any manager. Information is the result of transforming the data into meaningful and incisive management tools for the better management of operational risk exposures in a timely manner. When so-called indicators are being collected without a clear view about what they are reported for, or to whom or where they are reported, the firm has a problem. Few KRI reporting frameworks will succeed if they are implemented merely with the objective of regulatory compliance.

Data collection without risk management decision making will provide the businesses and functions with negative added value: they will implement a reporting framework for a cost without benefit. Most firms will have already defined a number of core data dimensions that are integral to aggregating and reporting KRIs, such as:

- Incident (historical and potential), normally consisting of:
- "one or more causes;"
- "one or more events (as in a chain of events);"
- financial and non-financial (i.e., reputational) impact on profit and loss; and
- risk categories;
- process, with a clearly defined hierarchical level consisting of:
A portfolio of KRIs that reflects the risks of most importance to their mandate. The regulators have defined the scope of operational risk and have provided, for regulatory reporting purposes, an event-type classification. Each manager should be receiving KRI information that allows them to proactively identify problems within their area of concern, and take appropriate action, even if that is simply to escalate or delegate to the next level up or down.

In essence, these multi-event indicators, analyzed by cause rather than specific potential events, provide early-warning signals regarding unexpected losses and a flag to senior management to start asking some pointed questions. If a KRI analysis results in the conclusion that there are insufficient management skills in any specific unit or location, this is an issue appropriate for the attention of senior rather than lower levels of management.

If a KRI breaches the thresholds or trigger points previously established, then it is usually escalated to the next level of management, depending on the materiality of the situation.

Then, the senior manager must decide whether to accept the risk and increase the threshold or reduce the risk indicated by the management information. Some managers also set triggers at an earlier point, when the indicator starts to trend upwards or accelerate towards the threshold level.

Top-down KRIs are generally set in conjunction with group functions and may relate to general causes or specific potential process failures or events. In some cases, top-down and bottom-up KRIs can be directly linked together to form a chain in the operational risk exposure management process.

At the end of the day, the mitigation of the risk by investment or the acceptance of the exposure needs to be the responsibility of the business unit head or the CEO. The CEO can put pressure on the business unit head based upon the KRI of outstanding audit points. They can also assist with a reallocation of resources as required, if the exposure to operational risk is above that desired.

Ideally, through the application of the above principles, each manager will end up with a portfolio of KRIs that reflects the risks of most importance to their mandate.

In summary, a strong KRI aggregation and reporting programme will have as its clear objective the effective management of operational risk, and will be founded on data dimensions and a classification system that are common to the entire operational risk framework, as well as many elements of the firm's general management reporting structure. While one could understand that senior management desires predictability and conciseness in reporting, every risk manager will know this dream is not achievable through the selection of (only) 10 operational risks KRIs.

Many KRIs currently collected by businesses and functions are for managing expected rather than unexpected losses. Setting relevant and reliable indicators is a challenge. They should be linked to the causes of operational risk incidents so that operational risk managers can monitor the drivers of operational risk exposures on an ongoing monthly or quarterly basis. It will not be known whether the indicators are "key" until they are refined in the light of experience.

While the benefits of a robust, dynamic and comprehensive set of KRIs across the organisation coupled with strong aggregation and reporting are worthy objectives on their own, they also open the door to some more "advanced applications" and opportunities. Most of the KRIs and management information used to manage the risk-and-control environment identify the more routine "unexpected"
risks - those that occur once every 5-10 years - through the typical operational, investment, market, credit or economic cycle. This is appropriate because these are the risks that management can realistically imagine resulting in an event, and that they can actively influence.

However, one exciting area for operational risk index development currently under exploration is the establishment of indexes for external factors. Examples could include:

- white-collar crime;
- blue-collar crime;
- payment systems stability;
- weather events; and
- terrorism ratings.

Many of these exist today as governmental outputs on socio-economic conditions. They represent information on the external environment in which an institution operates, and the deterioration in such an indicator would surely be a worthy input into a measure of the risk environment of a firm for a location in which it operates. That access to the collective experience and knowledge of the entire industry, as well as through the various regional and business line working groups, is a powerful tool for enhancing any firm's operational risk management.

Conclusion

Risk indicators in general, or KRIs programme in special, have one very specific quality that no other operational risk management or measurement tool offers: quasi real-time exposure information.

- Loss data, whether internal, provided by a public source or obtained from a data consortium;
- Risk-and-control assessments are periodic subjective evaluations of the state of affairs;
- Scenario analysis allows you to consider what could happen to you, it certainly cannot provide an accurate barometer of real-time conditions, and
- setting aside economic or regulatory capital as a safeguard is the ultimate fail-safe – any firm that gets to the point where it needs to employ these measures is in such deep trouble that it is probably too late to contain much if not most of the collateral damage from what has already happened. Insurance is also an uncertain safeguard, with some potential relief triggered after the event has occurred.

Therefore, a KRI programme is the only way to provide management with the real-time targeted feedback they need to make mid-course adjustments as required.

And that is essential to the achievement of business goals and the safety of the organization.

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