The operational risk pyramid

The extremely heterogeneous character of operational risk often makes discussion of it appear fragmented and unstructured. David Rowe proposes one possible paradigm for organising our thinking on various aspects of this increasingly important topic

Operational risk management has two broad objectives: commercially appropriate efforts to minimise losses from operational failures; and estimation of residual potential losses to determine the appropriate capital allocation to absorb such losses when they occur.

Too often discussions of op risk address one or other aspect as if it represented the whole problem. In fact, a complete programme of operational risk management must deal with both issues, and some aspects of such a programme contribute to both objectives. I have found the following simple schematic useful in conceptualising a holistic approach to operational risk. It encompasses five components, usually represented as five layers of a pyramid, from Level 1 at the bottom to Level 5 at the top.

☐ **Level 1 – operational processes.** All businesses are built on the performance of various operational processes. These processes must be carried out with a high degree of discipline and consistency. Some are primary processes that involve direct production of the product or service delivered to customers. Others are secondary, such as planning, accounting and risk oversight, among others. It is in the risk oversight processes that op risk interacts with market and credit risk rather than being simply additional to them. Integrity of market risk information collection and analysis, and of the credit risk assessment and approval process, are just as appropriate subjects for an operational risk review as more direct production processes.

Many tools are available to improve process quality and efficiency. In banking, such technology tools include straight-through processing, electronic confirmation matching tools and automated collateral management systems. But a comprehensive approach to operational risk requires support for the remaining four levels of the pyramid.

☐ **Level 2 – control and risk self-assessment (CRSA).** This involves a formal review of what can go wrong with a process, the potential cost of such failures, how the process can be strengthened and whether the residual risk of loss from operational failures is acceptable. Even when the residual risk is acceptably small, it is important to ask whether the control portfolio is optimal. Perhaps less costly controls would yield equally low risk of loss, or perhaps more risk should be accepted because the cost of the marginal reduction is excessive.

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In effect, CRSA is qualitative analysis based on the judgement of people close to the process being reviewed. It draws on the established tools and procedures of what has come to be known as 'total quality management'. It feels very different from traditional market and credit risk analysis, involves words more than numbers, and is much 'softer' than the two traditional financial risk management categories.

Once an acceptable control portfolio is in place, it is important to monitor the quality of execution continuously. This leads to the next level of the pyramid.

☐ **Level 3 – key risk indicators (KRIs).** Quantitative risk indicators often involve a trade-off between those that are appropriate (suitability for a particular condition, occasion or place) and those that are commensurable (capable of being measured by a common standard). Key risk indicators (also known as key performance indicators) are specific quantitative measures of performance over time that are designed to provide early warnings of potential future losses. While they are highly appropriate indicators for particular processes, they are very eclectic and are not capable of being aggregated except by arbitrary rules.

Choosing, monitoring and verifying the validity of these forward-looking indicators is crucial to continuous process control. If properly chosen, changes through time in the behaviour of KRIs provide objective signals to higher management that there is an issue to be addressed before a situation becomes critical.

☐ **Level 4 – loss data collection.** While not the only, or necessarily the most important, indicators of process weaknesses, actual realised losses do play a role in evaluating op risk. Such data collection should be surrounded by a rigorous review process to ensure reconciliation to the P&L and to provide supplemental information on the nature of the causal failures that gave rise to such losses. Given the scarcity of such loss data in most organisations, these are often supplemented with industry loss data. This does, however, give rise to serious issues surrounding how to scale such losses to the size of a specific organisation and how relevant such losses are given a different process control structure. Despite these problems, actual loss data is necessary to estimate the aggregate op risk capital requirement, so ensuring its integrity is crucial.

☐ **Level 5 – analytics.** Only when a proper foundation is in place does it make sense to apply sophisticated statistical techniques to estimate potential extreme loss events as a basis for capital allocation. A number of mathematical techniques have proven to be effective in the property and casualty insurance world. They are the most logical available techniques for estimating operational loss distributions, but their transferability from physical systems to social remains to be seen.

Conclusion

An effective op risk management programme should build each level of this pyramid on the lower ones. Too often the temptation is to jump into collecting loss data and estimating loss distributions (Levels 4 and 5) without doing the hard but necessary work of control and risk self-assessment and development of key risk indicators (Levels 2 and 3.) The most successful organisations will start from the foundations and work up rather than the other way around. ■