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Enterprise Risk Management: The Critical Importance of Data

Capturing and managing accurate, timely and relevant data is vital to effective ERM

Ask the senior management of a bank what they regard as the most important aspect of Enterprise Risk Management ('ERM') and the chances are they will tell you it is the ability to have a holistic view of the risks being run by the organization. Their perspective is typically a top-down view and seldom do they think of it in terms of the core bottom-up enabler for ERM data. Why? Because data is a given and we live with what is available.

Everyone knows that it would be nice to have more data, better data, and quicker data. However, the data issue is generally deemed to be a challenge that is separate from the immediate demands for improved ERM. This underestimates the critical importance of data to best practice ERM.

The increasing importance of Enterprise Risk Management

For various reasons, and not least as a consequence of the recent financial turmoil, banks have been investing in their management of risk with a view to improving their ERM. There are four broad drivers for change, all of which deserve consideration:

- i. *Survival*, or self preservation, is something wanted by all stakeholders – staff, management, shareholders and customers. Nobody wants to deal with a risky bank. Recent history, with so many banks suffering from unexpected losses, whether those losses have been as a result of credit risk, liquidity risk (Northern Rock) or operational risk (the London whale at JP Morgan Chase), etc., has brought this home with a vengeance.

Banks are therefore constantly looking to minimize the potential for defaults and to reduce losses incurred, for whatever reason. This means revisiting data, process and procedure with a view to improving any or all of them. Likewise, banks recognize the need for more capital, to act as a cushion against financial shocks, and are therefore investing more in this as well.

- ii. *Regulation* (Basel III, Dodd Frank, etc.) is also driving change. Regulators' interest is mainly on behalf of depositors and in respect of the wider economy or for macro prudential purposes, and they want a whole lot more change than the banks are naturally inclined to volunteer. Consequently, there are ever increasing demands for extra information and reports, for additional stress tests, and for even more capital. But all these things come at a cost to the banks, whether in terms of people, systems or capital.
- iii. *Economics* should also be a motivator. In the context of this article, this is about proactively improving profitability by better management of risk, by understanding return to risk dynamics of individual exposures up to the portfolio level and by ensuring more efficient use of capital. These things have not generally been considered, from an ERM perspective, as much as perhaps they should have been.

Much of the investment made to date has been as a result of overwhelming necessity, reactively for survival or in response to regulation, rather than proactively. There is therefore an opportunity for banks to revisit the economics of how they operate, in terms of how to drive better risk adjusted returns on scarce capital, and in terms of managing the data that feeds the information flows which inform these risk adjusted measures.

- iv. *Strategic* drivers take a longer term view on investment. In line with the foregoing comment on banks being reactive, too much of the investment that has been made over the last five years has been tactical, in response to immediate needs (particularly regulatory-driven ones), with an eye to solving a specific problem in a very short timescale. Investments have often been made without consideration for the bigger picture requirements of a sound ERM framework, including the longer term strategic advantages of a solid data foundation.

Based on these drivers of change, it is clear that there is a strong business case for investment in ERM and the data that supports it. However, this business case has not been exploited as much as it might have been.

The Quest for Better-informed Decision Making

For an ERM framework to be deemed a success, it must be seen to deliver better informed and more timelier decision-making capabilities. Examples of sound ERM practice include the ability to monitor, in near real-time, the impact of day-to-day lending decisions being made by originators in a branch network, or alternatively, the cumulative effect of trading decisions being made on the trading floor, in aggregate, each day. ERM is about timely scrutiny, even on a systemized basis, of the extent to which concentrations are being built up, or whether industry or geography limits are being eroded too fast; or if pricing is too low (for profitability), or too high (for competitive positioning).

Automated and centralized, reporting enables these things to be visible at the enterprise-wide level, but only as long as such reporting is informed by granular, bottom-up data. It is therefore critically important to capture the right data at point of origination. Raw data on its own is insufficient, but without it one does not have the building blocks to inform enterprise level decisions in a timely way.

So ERM requires the right data capture, feeding automated workflow type systems, to give operations management access to the data required for daily activity purposes and, in turn (via a central data repository), to give executive management access to the data required for business intelligence purposes.

In this way, the right people end up discussing, monitoring and managing the risks appropriate for consideration at each level of the organization; for example, business management has the opportunity to assess whether large deals are meeting the hurdle rates for different risk profiles, while executive management can review whether business for a particular segment or region is meeting its targeted risk adjusted returns, etc.. The ultimate objective - to ensure that unusual, unintended, or unacceptable risks are isolated and proactively managed - can then also be met.

Transforming Data into Information, into Business Intelligence = BEST PRACTICE DATA MANAGEMENT



Data Silos Undermine ERM Effectiveness

Deficiencies in raw data are an obvious challenge, but another related obstacle to sound ERM is the management of risk in silos. These might be viewed in terms of operational entity (e.g., the freedom of individual geographic entities to manage their own risk), line of business (e.g., wholesale vs. retail vs. corporate) or by type of risk (e.g., credit, market, operational).

When silos exist, the end result is the separation of data management for finance and risk management. As a consequence, data management for the corporate and retail banking groups, or for country "A" and country "B", or for liquidity management and for credit risk management, happen on systems that do not talk to each other.

To understand how limitations in data availability across the enterprise frustrated the holistic management of individual firms, one only needs look at the recent subprime crisis, which morphed into the liquidity crisis, and then the economic crisis (in which credit risk in one specific market was transformed into liquidity risk), which in turn led to the wider contagion that we experienced post 2008.

The point here is that risk managers and regulators now realize that it is necessary to analyze the combined impact of different risks, in order to understand the impact of possible scenarios on a bank's balance sheet and P&L. If banks had not been so siloed, and if their stress testing and planning capabilities had been more holistic (and sophisticated), we might have avoided much of the pain associated with the sub-prime crisis. Ultimately, banks did not have access to the data needed to enable the robust management of risk across the enterprise.

Data is the foundation

What is increasingly evident is that a bank needs access to good data from across the organization in order to function effectively at the enterprise level. Data is the foundation of and the enabler for good ERM. As alluded to earlier, this means banks need the ability to collate raw risk related data, combine it with non-risk data, model it to transform it into meaningful information, and then further aggregate it for business intelligence purposes.

This point about data being the foundation of all things ERM triggered the [Bank for International Settlements' January 2013 paper](#) on risk data aggregation and risk reporting. This paper set out 14 principles to strengthen risk data management, in four broad categories: (1) overarching governance and infrastructure; (2) risk data aggregation capabilities; (3) risk reporting capabilities; and (4) supervisory review, tools and cooperation.

The aim of the BIS was to raise the bar (i.e., the overall standard of data management) because the global regulatory community, as a whole, also sees data as key to enhanced ERM and reporting. Although the paper was focused on Systematically Important Financial Institutions (SIFIs), it was overtly envisaged to apply to Domestically Important Financial Institutions as well. Furthermore, according to many regulators, they expect the principles to be generally adopted by all institutions under their supervision, given its high relevance.

Combining Top-Down and Bottom-Up Approaches for Stronger ERM

Although the BIS paper seems at face value to be a top down perspective (on aggregation and reporting), it has at its heart the need for bottom up data flows. Regulators are also observing that ERM is, fundamentally, the ability to capture and manage all necessary risk related data. This process entails the following:

- » aggregating data - and then slicing and dicing it - to perform bottom-up analysis, through multiple dimensions;
- » performing top-down data management while monitoring the evolving balance sheet and P&L information;
- » understanding the behavior of the data under different scenarios (hence the need for stress testing and scenario analysis);
- » assessing the options for managing the consequences of undesirable movements in the metrics, as they are observed, in real time; and
- » maintaining the ability to execute on the aforementioned options.

This means that, at the centre of the bank, at the "press of a button," management should be able to assess key risk dimensions and drill down in to them. How each bank defines "key" is institution- specific, so while the most important risk dimensions for one institution might be, say, industry concentrations or grade concentrations, another might put more weight on ratios such as risk-adjusted return on capital (RAROC) or risk- weighted assets to economic capital.

The point is that this data needs to be accessible, accurate and timely, enabling risk-adjusted performance management - both at the aggregate level and all the way down to individual customers or loans. In short, an organization's reporting should enable it to fulfill this sort of drill-down capability - across business lines, across operational entities and across risk types. This is because, with the right data (or "business intelligence") informing the right people, in a timely manner, one begins to achieve a meaningful ERM framework.

The biggest challenges is to be able to do this across all risk types, not just credit, market and operational risk, but for liquidity, capital, interest rate, settlement, IT and other risks. Of course this is much more easily said than done, and will only come with time, with the right ERM infrastructure and with the right "risk culture." ERM requires investment in the model, data, IT and process frameworks in order to provide consistency across the organization.

By way of illustration, take regulatory stress testing. The heart of a well-functioning automated stress testing process is a single data repository in which the relevant risk and finance data required for the regulatory stress tests are consolidated and readily available. With the key data layer element in place, the models, the workflow tools, and the reporting modules can be layered on top. Once this structure is in place, banks are afforded a scalable and powerful capability, which enables them to run and effectively report on a broad array of enterprise-wide stress tests in a timely and cost efficient manner.

In addition to supporting stress testing, this same capability also offers substantial insight to senior management about the bank's risk profile and potential opportunities. It therefore facilitates the medium term planning and annual budget rounds, capital allocation, and wider enterprise management, consistently across the organization. None of this will work without good data, which brings us full circle back to the need look at data at the bottom end and for the ERM framework to be underpinned by increasingly accurate, relevant and timely data.

Closing Thoughts

Delivering best practice ERM in a bank is about ensuring the key central functions within risk, finance and treasury have the data, models, tools and analytics that they need to fulfil their responsibilities. Good data management allows those responsible for taking bottom-up data and reporting on it (both internally, up to the board, and externally) to be effective and efficient.

Of course, all this needs to be within a strategic context, with consistent, well-informed policies, and with governance providing the right checks and balances. Holistic ERM ties in all these constituents and ensures that those responsible are all empowered with the bottom-up data and analytics they need - to report both internally and externally, and to do so as close to real time as possible.

An ERM vision is the appropriate response to the multiple strategic, economic and regulatory drivers referred to at the outset of this article. The good news is that raising the standard of the firm's ERM framework is simply a case of taking advantage of established advances in risk management practices, moving from a silo approach to a holistic view of risk, and simultaneously increasing the focus on data and its management.

AUTHOR

Charles Stewart is a senior director at Moody's Analytics. He joined Moody's KMV in early 2006 from Barclays Bank PLC, where he worked in various capacities during his 28-year career there. Since joining Moody's, he has worked with banks and regulators around the world. Drawing on his knowledge of both theory and the realities of day-to-day practice, he has used his extensive risk management experience and his familiarity with many of the challenges associated with commercial and corporate banking to help financial institutions with the development of their risk management planning and strategies.

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