The Art and Science of Risk Management Reporting

Julia Ryan

There are spirited debates occurring in boardrooms of energy companies. There are some naysayers, claiming, "Financial institutions had the most sophisticated risk management, and look where that got them!" And there are other supporters who place more value than ever on good risk management information and mitigation—championing insightful, consultative, and solution-oriented risk management, which can be a key strategic capability. Fortunately, the latter group holds sway over the former.

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But risk managers need to understand this climate, so they can develop meaningful information for those who need it most: senior management, the board of directors, state regulators, and rating agencies. The key is to understand the informational needs of each stakeholder. While the underlying data and analysis is the same for all the groups, the manner in which it is presented and the application of the information is very different among all four.

EXECUTIVES NEED INFORMATION FOR STRONG FINANCIAL RESULTS

Senior executives want to focus on value creation, not risk avoidance. Therefore, information needs to be provided to them in a strategic context. They want to understand what risks there are to achieving the financial objectives that they have laid out for the company.

Sometimes risk managers wonder if their senior management "gets it." Most likely, this occurs when the risk manager has laid out what he thinks are critical elements, and the risk committee fails to appreciate the information or act upon it. But the heart of the matter is that senior executives need solutions to problems. If the risk manager only talks about risks, not solutions, he may be perceived as "Chicken Little" by some senior executives. The way to combat this is to suggest mitigation plans. These should be developed in concert with the business managers who report up to the risk committee executives.

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Another suggestion is to explain the risks assumed to achieve previous results, to provide a risk-adjusted profit measure. Upon receiving valuable information that helps them run the company, the risk committee will be far more attuned and engaged in meetings.

Another role the risk manager has is to coach to the senior managers. Executives need to be able to explain company risks at a high level to others, such as board members, rating agencies, and equity analysts. Putting risk information in understandable terms is tantamount to assisting executives develop their risk sound bites.

Executives are also in charge of allocating resources, whether they are for staffing or systems requirements. They need to understand the key risks, so they can allocate resources to

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address those risks. Hence, risk managers need to communicate what resources are needed for risk mitigation.

It is important to periodically evaluate reporting and system requirements with executives. They should be apprised of material changes in metrics, proposed new limits, and significant reporting changes. Executives need a context for what, how, and why certain risks are measured. Executives also need to be able to glean key data points from risk reports.

Last, executives are responsible for good governance and informed risk decision making. As such, they should be familiar with the risk infrastructure. Therefore, it is important to build a shared corporate vision for risk management with them; thus, executives support risk management infrastructure initiatives.

BOARD MEMBERS DO NOT WANT ANY NASTY SURPRISES

Boards are terrified that their company could be the next firm to announce a financial meltdown. Hence, boards are asking more questions, because they are worried about a risk creeping up that no one knew about and no one had monitored. The fact that they spend only a few hours per month overseeing the company's business means that information for them must be carefully communicated.

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Risk reporting is most meaningful when the board understands how risk reporting relates to company initiatives. Most important, they should be provided both high-level risk reporting as well as risk-mitigation reporting. Unlike the senior executives who understand the sector, the board members appreciate having an industry context provided, as a backdrop for discussion of the company's risk issues.

Board members just want to hear about value-at-risk (VaR) measurements, risk limits, the three to five major value portfolio drivers, the amount of capital needed to create the financial results, and collateral needed in the event of a downgrade or significant market move. Board members will want to understand the major operational and regulatory risks, and a sense for what those risk exposures may come from a probability and severity perspective.

Boards also care about governance, controls framework, and limits. The charters for the audit, finance, and/or risk management subcommittees of a board outline its responsibilities in this regard. Boards want to ensure that the company has best-practices-caliber risk management and appropriate risk measures.

STATE REGULATORS FEEL A RESPONSIBILITY TO PROTECT CUSTOMERS

Utility commissioners formally have two responsibilities: (1) to protect customers' interests and (2) to ensure utilities earn a fair rate of return. Typically, utility commissioners are either appointed or elected into positions, making these high-profile political positions. In this context, is it any wonder that they place great importance on protecting customers against rising costs and will want to know how the utility plans to manage energy costs? From a reputation perspective, they do not want their state to be in the news for soaring customer rates, tragic energy-related accidents, or energy-supply disruptions.

Incoming utility commissioners often have limited energy backgrounds. And it may only be possible to communicate risk information to them once or twice a year. But time investment in this stakeholder group is of great importance. Do not let your introduction to risk management occur in a litigated rate case. Instead, help your company build credibility in a friendlier setting outside of rate cases.

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Commissioners have no interest in being risk professionals: commissioners do not want to learn the intricacies of risk-management parlance. They only want to understand risk management in the context of approving hedging on behalf of customers. They do not have time to invest in understanding the nuances and latest trends. For this stakeholder group, an explanation of the company's risk program must be customer-focused and should use everyday vernacular, not industry terminology.

  / DOI 10.1002/gas

To engender support for your company's hedging, develop some simple hedging protocols that ensure transparency and good documentation. This is critical to avoid later contentious discussions about cost recovery of hedges that might not be in the money.

The commissioners delegate oversight of any hedging program to commission staff. Commissioners will expect the staff to ensure that the hedging program does not result in any cross-subsidization and that all costs are "just and reasonable." Typically, the attorney general's office will also be very interested in the company's hedging program. These stakeholders will want to see fuel and power costs, as well as information related to approved hedging programs.

It is valuable to determine the experience level of the commission staff and attorney general's office staff. They may surprise you by having some prior work experience or academic training in commodities and/or hedging. Invest as much time as needed to get them comfortable with your reports, models, and, even more importantly, your hedging protocols. Time well invested at the front end will save you immeasurable work later on when they audit your fuel and power costs.

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Next, your company's hedging protocols should demonstrate your disciplined portfolio management. There are two "bookends" in terms of approaches: programmatic hedging and discretionary hedging. Programmatic hedging is mechanistic, employing periodic hedging with specific guidelines, usually timelines and volumes that will be hedged. The benefits are that programmatic hedging is very transparent, easy to track, can be done with a small staff, and is relatively easy to document for posterity. The cons are that it is passive, less responsive to market conditions, and mechanical.

The other end of the spectrum is discretionary hedging. This is more subjective in nature, as there are no set timelines or volume requirements. Discretionary hedging should only be attempted by firms that have extremely good market insight, strong fundamental market analysis, and experienced traders. The benefit is that it allows the company to be more opportunistic. But the cons are that it is less transparent and harder for nontrading personal and external stakeholders to understand. As a result, it can appear to be less thoughtful or disciplined, particularly if the results are not good.

What may be the better option is to consider a blend of programmatic and discretionary hedging protocols. As a starting point, risk management can set limits, within which discretionary decision making is applied. With respect to where the company hedges within the band, this can be documented using predetermined trigger points. These could be risk metrics, such as movements in VaR. Or the company could identify seasons when prices tend to trend higher or lower, and focus hedging at that time. The company could also use fundamental market triggers such as inventory levels, temperature data, changes in supply and demand, intercommodity price relationships, and technical market analysis to trigger hedging activity.

RATING AGENCIES CARE MOST ABOUT RISK INFRASTRUCTURE

This stakeholder is deeply interested in your risk management infrastructure, probably more so than almost any other stakeholder. The rating agencies understand there is no "one size fits all," and their chief interest is that a firm's risk infrastructure must be strong.

Demonstrating the company's risk management infrastructure is very important to your company. This could influence the rating agency when it is wavering between two ratings, or the difference between "stable" or "watch for possible downgrade." By putting your company's "best foot forward," you might help make the difference in their understanding of the company's strong financial position.

Be sure to articulate, and then demonstrate, the robustness of your company's risk management culture. The rating agencies expect the company to have a well-integrated risk management program. This means that in addition to policies, models, and metrics, there is a culture of risk management.

Rating agencies want to see management and board discussion of risks. These analysts will want to see that senior executives and board members are well versed in risks; that risk management covers not only market and credit risks

DOI 10.1002/gas

but also operational, regulatory (compliance), and legal risks; and that there is a strong linkage between strategy and risk management.

Finally, the rating agencies want to know how the company navigated through a recent company challenge, be that an earnings hit, a write-down, or some other challenging event. Be prepared to explain risk management's response to that event.

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CUSTOMIZED PORTFOLIO DESIGN SHOULD REFLECT UNDERLYING BUSINESS DRIVERS

No company should have the same portfolio design. Every company has different reporting needs that arise from its particular business profile and asset base. Reports should be designed in a manner that enables management to run the company well. Adjust the detail and the terminology for the audience to whom you are presenting.

Major risk elements should be revealed in a summary risk report. Key portfolio elements are asset positions, load commitments, structured deals, commodity types, pricing elements, embedded options and their "Greeks," basis risk, operational elements, and volumetric variability.

FIXED-PRICE POSITION REPORTING SHOULD REFLECT BEST AVAILABLE INFORMATION

Fixed-price reporting may seem straightforward, but there can be subtleties. By example, retail loads are highly variable. Thus, you must understand how customer floating prices are set and review mechanics of fixing prices for load. If there are significant options embedded in the portfolio, the deltas will influence the fixed-price position reporting. And some risk systems struggle with timing of index-price settlement, as well as a volumetric swing in assets and loads.

In addition, it is critical to understand the risks associated with volumetric swings in assets and loads. If a generator loses its base-load production because there is less snowpack or a coal plant has an extended outage, the risks of that lost production can be more significant than when an outage occurs at a combined-cycle gas plant. As another example, retail load swings typically occur at the least opportune moment. Market prices and load correlate to changes in weather—when the customers use more energy, it typically costs more to supply it. When the customers use less energy, the company must sell surplus into a lower-priced market.

BASIS RISK IS EMBEDDED IN MOST ENERGY COMPANY PORTFOLIOS

To the degree that basis risk is a material risk to the company, this must be included in reporting. It is important to review regional positions (by basin, hub, zone, or other geographical designation). Some companies refer to them as basis positions, zonal positions, and/or market spreads. More often than not, these are not deliberate positions, but these arise as a result of an asset's location relative to a liquid market, the impact of retail sales in various locations, or the distance between fuel source and plant site.

Basis risk reporting is critical if you have price exposures in different market, hubs, supply zones, or end markets. Price relationships between market locations can change, and you need to know where your long and short positions are to ensure that the risks are monitored. Many companies do not think of transmission, transportation, or storage as spread positions, but their value can swing significantly depending upon the changes in market prices. There can also be a tendency to overlook the impact of transmission constraints.

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REFLECT OPTIONALITY EMBEDDED IN ASSETS AND STRUCTURED TRANSACTIONS

Many energy assets have embedded optionality (gas storage, gas generation, fractionating facilities, refiners). Ensure that physical assets are not modeled just as spread options, but that real-life operating parameters are included in the asset's deltas, that reliability requirements are incorporated, and that extrinsic value really measures value the company can harvest if opportunities arise to do so.

  / DOI 10.1002/gas

By example, the generation portfolio should reflect the best available operational information. This would include estimations for forced and unplanned outages, variable operation and maintenance costs, ramp rates and associated heat rate curves, contingency planning requirements, minimum run-time/must-run requirements, and ancillary services. Another consideration for jointly operated plants is to model the limitations of dispatch protocols if the plant is jointly dispatched.

If your firm cannot "harvest" the optionalities for any given reason, you do not want to model them as flexible options, for your profit-and-loss and VaR metrics will be incorrect. For example, if you have out-of-the-money gas plants that you need to keep ready for reliability reasons, then you do not want to model those plants as out-of-the-money heat-rate options to be monetized in the market—instead, those plants should be modeled with an eye toward their reliability requirement. If you need to retain gas-storage capacity to serve peak load, you would not want to assign extrinsic value to that slice of the storage capacity.

INTERCOMMODITY PRICE RISK TOO OFTEN INVISIBLE

In a number of markets, there is more forward market liquidity in one commodity than another, and companies will hedge in the correlated commodity. An example of this is the case of hedging Electric Reliability Council of Texas (ERCOT) power in natural gas.

However, sometimes companies get too comfortable with this approach. Risk managers need to monitor the spread positions closely, and not rely too heavily on historical market-price correlations. The positions should clearly reflect cross-commodity risk of hedging one commodity in another one, and the VaR and sensitivity analysis should include the cross-commodity exposure.

RISK MANAGEMENT MYTHS ABOUT STAKEHOLDERS' NEEDS

Some risk management myths are:

- *Risk managers need to demonstrate their fantastic risk management tools.* Yes, but only to a very limited degree. The stakeholders will never be as passionate about the models as you are. Take comfort that your stakeholders trust you to have found and/or built the right models and tools. (The possible exception could be utility commission staff members who are intrigued as you are by models.) What the stakeholders really care about is the limitations of your tools, what information you generate with the tools, and how the company leadership acts on the information.
- *A fancy presentation will carry the day.* Yes, a well-developed presentation is helpful, but do not go overboard. If you use graphics, make sure that they are easy to understand. Ultimately, content is more important, combined with reliable data. Your presentation should have a clear story to tell, even if it is only to update your stakeholder. Early in the presentation, you need to explain why the information is important, provide a context for the information, and tell your audience why they should care about this information. If you cannot articulate the relevance to them, you are wasting their time.
- *Quantitative analysis is critical.* Absolutely true. But it has to be understandable quantitative analysis. Management will no longer blindly accept quantitative model output. That is what got many banks in trouble in the recent subprime mortgage meltdown. For people who do not delve deeply into risk management puzzles, quantitative analysis can be intimidating and frustrating. Build understanding to build credibility. Describe what the metrics measure (and what they do not). Explain source and history of data inputs to the metrics and have an outside expert validate your models.
- *Good risk analysis is all they need.* Wrong. Try to portray risk in the context of opportunity for stakeholders. Risk management analysis that ties to company strategy is more understandable to stakeholders than risk analysis provided in a vacuum. Additionally, if you can posit solutions, this makes risk analysis more "actionable."
- *The more "at-risk" metrics, the merrier.* No. Until recently, it was de rigueur to have many "at-risk" calculations. In addition to VaR, there have been metrics designed to measure margin at risk, earnings at risk, capital at risk, cash flow at risk, liquidity at risk, customer rate at risk, and so on. These are very valuable tools, but do not go overboard. Think about which measures are really important to your company, then develop robust statistical analysis to support the few most meaningful metrics.

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