

Operational Risk: New Challenges and Responsibilities for Leadership

by Rick L. Monty, Head of Chemical Transactions and J. Mike McCandless, Head of Operational Excellence

Executive Summary: When safety incidents occur, many leaders look only at the technical causes — gaps in systems and standards, risk management processes, resource allocation and availability. Learn why these factors only paint part of the Operational Risk picture... and how ‘softer’ leadership and behavioral factors can often be the most relevant aspects that influence critical risks.

Despite our best efforts to prevent them, process safety incidents continue to occur with disturbing regularity all across the chemical and energy industries.

Thankfully, most of these incidents result in only mild to moderate impacts on property, processes and people. But statistical studies show that a small percentage of these occurrences continue to result in serious consequences to facility operations and to human safety.

Even less serious events can greatly impair a site's productivity and reliability, while some may result in catastrophic outcomes. In recent history, these disasters become the topic of intense media and regulatory attention. The press, government agencies and the public at large often ask business leaders the obvious questions of accountability:

- "How did it happen?"
- "What was the cause?"
- "Who was responsible?"

Then the questions drill down even further:

- "What role did senior management play in these decisions?"
- "Where was the Board of Directors?"
- "What is the liability?"

Questions arise in other corporate boardrooms as well, primarily “How do we make sure we don’t have the same drivers at work in our business?” and most importantly, “How do we make sure it never happens here?”

These are good questions. And there are always more.

The truth is that, in large, complex, operationally intense industries such as chemicals, energy and power generation, the **seeds for Operational Risk incidents exist almost universally.** And although these incidents rarely result in catastrophic outcomes, many have seriously impaired industrial capacity, diminished productivity and damaged job and personnel safety.

No one wants to believe that safety incidents happen because of deficient standards, insufficient investments in safety equipment and training, or uncaring attitudes. Chemical and energy facilities are among the best-designed and best-operated units in the world. Yet even the most diligent organizations experience accidents — many of them serious. **So how can a business maintain an effective leadership role overseeing these standards so that incidents can be prevented?** What’s missing?

When considering a total management process to prevent catastrophic situations, it’s easy to jump directly to technical solutions and sophisticated control systems, or lack thereof. These aspects are critically important... but they are only one dimension of a more complex solution.

Exhaustive post-incident benchmarking has shown that **other drivers are equally critical in reducing the possibility of unforeseen negative events and preventing catastrophic incidents.** And in many cases, underperformance of one or more of these drivers may constitute significant “blind spots” within even the best organizations.

**8IGHT DRIVERS®
FUNDAMENTALS FOR MITIGATING OPERATIONAL RISK**

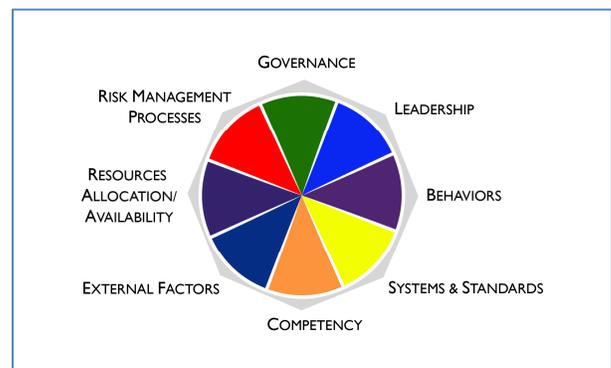


Figure 1: When it comes to managing Operational Risk, systems and standards only tell part of the story.

8IGHT DRIVERS® IDENTIFYING BLIND SPOTS (Sample Scorecard)

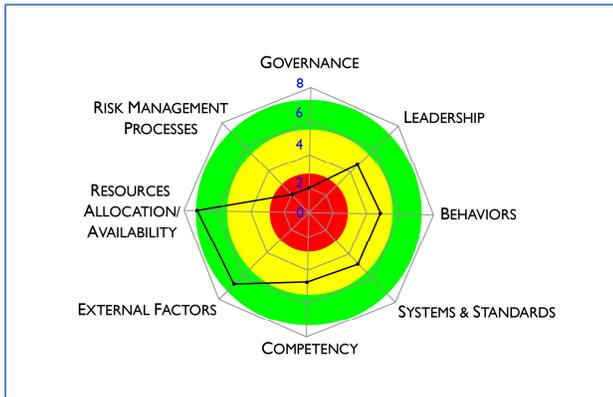


Figure 2: Pilko's 8IGHT DRIVERS® assessment visually indicates strengths and opportunities for improvement.

Most leaders in chemical and energy businesses are engineers, chemists and technical professionals by education and experience. By their very nature, they see the problems of operational risk in terms of systems and standards, risk management processes, and resource allocation/availability. However, post-incident investigations show that **even the best technical processes often fail because of gaps in the “softer” drivers of operational governance, behaviors, leadership, competency and external drivers.**

Even the most effective operating standards, for example, are essentially weakened if the governance system fails to implement and maintain those standards. These failures can stem from a broad number of issues, including:

- Inadequate training
- Poor chain of custody for responsibility delegation
- Inadequate management of change processes
- Failure of senior business leaders to review and enforce standards

Likewise, a perfectly adequate governance system can often be overtaxed — and ultimately fail — when the behaviors of a business lead to organizational acceptance of higher levels of operational risk. Or the governance system may be so complex that it pushes risk management processes to the breaking point.

Because of this complex interaction of critical drivers, the essential catastrophic risk question can be posed most effectively by evaluating what Pilko & Associates term the **8IGHT DRIVERS® for Operational Risk Management.** This model involves such questions as:

1. Does our business possess and execute the necessary **SYSTEMS & STANDARDS** to manage the risk of our operations as compared to those of leadership peers in our industry?
2. Does our business possess the necessary **GOVERNANCE** processes to ensure that the systems and standards for operational risk, emergency response and business continuity planning are properly implemented and executed?
3. Does our business **BEHAVIORS** drive the necessary level of ownership in safe operations? Is it overtaxed or defeated by growing complexity in business systems and processes?
4. Does our **LEADERSHIP** — from the top down — consistently reinforce and insist upon a strong operational risk and safety culture through both their actions and their words?
5. Do we have the appropriate **RISK MANAGEMENT PROCESSES** in-place to measure performance and to ensure that the organization has the appropriate focus and discipline?
6. Does our organization have the **COMPETENCY** to recognize and address hazards in an effective and responsible manner?
7. Are we providing the appropriate **RESOURCE ALLOCATION / AVAILABILITY** to ensure that our facilities are well-maintained and that the complexity of our business is effectively understood and managed?
8. Are we effectively addressing the **EXTERNAL DRIVERS** such as community relations, emergency response and security?

Senior leaders and Boards who ask the full spectrum of critical questions are the most likely to get a firm grip on the assessment — and then the mitigation — of the catastrophic risk potentials within their businesses.



ENGAGING 8IGHT DRIVERS®

How, then, should a business leadership team or a concerned Board begin to engage the **8IGHT DRIVERS®** to manage their operational risk and mitigate their catastrophic risk? The best approach, and the path taken by successful leaders in the chemical and energy sectors, is **rigorous assessment and action related to the following eight key drivers.**

1. RISK MANAGEMENT PROCESSES: Leadership companies employ both internal and external reviews of their technical standards and resources compared to their operational risks. These reviews consist of scheduled periodic critical risk identification, assessment and mitigation of key risk elements, known as the *assessment phase*.

Once key risk elements are identified, the second phase, *risk prioritization*, is performed. This is principally a matrix-mapping process similar to Integrated Risk Management, with the goal of identifying those risks whose (a) impact and (b) probability place them in a priority position. New, improved standards, control systems and even capital investments may be necessary to mitigate the identified risks. These processes will optimize risk reduction activities to prevent or avoid catastrophic incidents.

The final phase is the *response plan*, which is aimed at minimizing the impact to the organization when a serious incident occurs despite existing standards and controls. This phase encompasses a periodic review and update to the company's emergency response and business continuity plans, which are vital to minimizing serious business interruptions in the wake of an incident.

2. GOVERNANCE: As important as technical standards and controls are, the **internal governance of risk management is critical if those standards are to be effective in preventing incidents.** The operational aspects of a major chemical or energy business have typically been delegated almost entirely to the senior management team. But because today's public looks increasingly to the Board for accountability for actions and approved programs to be implemented in the wake of a catastrophic incident, such delegation is unwise.

Boards must ensure that the senior leadership team has a solid program to address catastrophic risks and periodically report on the progress of the program's goals. Governance processes must ensure a clear delegation for standards and systems implemented from the very top of the organization down to the operational floor. The continuity of this chain of custody should be ensured by management goals, action plan performance and periodic auditing, including third-party "cold-eyes" reviews.

3. BEHAVIORS: The third factor of catastrophic risk management is related to governance, but addresses the **development of cultural values in risk management.** Several models have emerged with the goal of (a) understanding the risk behaviors of an organization and (b) taking steps to change that behavior. Models that build strong risk behaviors follow these steps:

- Increase ownership and understanding of the total organization to question and address risk drivers.
- Provide positive reinforcement for safe behaviors.
- Achieve full organizational engagement in risk reduction.
- Increase knowledge and awareness of risks.
- Set very high levels of discipline in adherence to standard procedures.

In achieving these five cultural goals, **a complexity analysis is essential** to ensure that expanding an organization's standards and systems won't increase the complexity of operational controls to the point that they become confusing or misunderstood by individuals making critical decisions that could create risk. These cultural drivers are characteristic of high-reliability organizations, such as the U.S. Nuclear Carrier Fleet Operations, but they are also fully applicable to other complex systems like chemical and energy facilities.

4. LEADERSHIP: Leadership ensures that the standards and direction set through strong governance **translate to disciplined, consistent execution throughout the organization.** Strong leaders promote a healthy risk-management behavior by consistently reinforcing high standards for potential hazard and risk recognition and employee engagement, coupled with low risk tolerance, through both their actions and their words. They demonstrate that operational risk accountability is a personal core value for them. Effective leaders commit to teaching their employees to fully assimilate and embrace the importance of operational risk management. Ineffective leadership can scuttle the best governance, systems and standards, compromising the total organization's ability to manage risk.

5. SYSTEMS & STANDARDS: Leading organizations have robust systems and performance measurement standards in-place to **ensure that risks are addressed effectively and with an appropriate level of urgency.** They have strong audit systems in-place to verify compliance, plus variance processes to ensure that any deviation from standards is clearly understood and addressed by the appropriate level of management. They employ both leading and lagging process safety metrics in management reviews and take action to address unfavorable trends and behaviors.



Organizations that have strong systems and standards are able to identify and address issues before they can increase the potential for a catastrophic event. On the other hand, companies without such systems and standards have significant blind spots and are much more likely to be caught by surprise.

6. COMPETENCY: When all employees (including contractors working onsite) fully understand how to identify and address safety and risk hazards, develop the discipline to follow procedures without compromise, and have a questioning attitude, a strong foundation for effective risk management is in-place. However, employees who lack these attributes can potentially take actions or make decisions that can introduce intolerable risk to the company. This challenge can be particularly difficult because of turnover and internal movements that reduce experience at various levels in the organization. It is therefore crucial to have comprehensive programs in-place to effectively **manage change and build consistent competency throughout the organization.**

7. RESOURCE ALLOCATION / AVAILABILITY: To ensure strong operational integrity, leading companies invest appropriately to maintain facilities and staff. Facility maintenance starts with a strong mechanical integrity program, but goes further to ensure facilities are renewed on an ongoing basis. **A comprehensive maintenance program that includes both preventive and predictive maintenance significantly improves reliability,** which in turn significantly reduces non-routine operations that can and do lead to catastrophic incidents. Leading companies also ensure that they have adequate and knowledgeable staff in-place to avoid fatigue and errors, which are drivers in many catastrophic events. They also have measures in-place to anticipate and control the level of employee turnover in their organizations.

Organizations with a relatively stable work force have strong institutional knowledge to complement their systems and standards in effectively managing risk. Finally, leading organizations have streamlined systems for evaluating and managing their contractor workforce. As companies use more contract labor to manage costs, the importance of having highly skilled and knowledgeable contractors has increased dramatically.

8. EXTERNAL FACTORS: Even with the best of internal risk management systems, companies that neglect external drivers can be vulnerable to events that can pose a serious threat to long-term viability. **Leading companies have strong product stewardship programs that address potential adverse consequences after the product has left the plant.** They build community support and understanding through active and multiple two-way communication systems.

They also address community safety through offsite risk mitigation and cooperative planning with local emergency response organizations. Security for the physical facilities, for information technology and for product and raw material transportation must be fully evaluated and continuously improved. Even leading companies benefit from third party “cold-eyes” reviews to identify further opportunities for improvement and to understand industry best practices.

Many of our clients have realized that the proper assessment and implementation of catastrophic risk controls cannot rely on technical systems and standards alone. Many have therefore elected to engage a “cold-eyes” review of the **8IGHT DRIVERS®** to identify opportunities for improvement. Deliberate application and improvement in these drivers can deliver “deep competence” in managing operational risk. Effective development of such competence can effectively lower the probability that your CEO will someday get that dreaded phone call late on a weekend evening.

A SENIOR LEADER’S VIEW –

The Important of “Deep Competence” When Managing Operational Risks

We recently interviewed a deeply experienced Chief Executive Officer of a major North American energy company, who offered the following observations on the importance of achieving excellence in Operational Risk management:

- “It is extremely important today when the world is much more complex and equipped with sophisticated systems and technology. Four hundred years ago, the world was a simple agricultural society where risks were easily characterized. Today, the risks are much bigger and unknowns far more frequent.”
- “When operating from a level of Deep Competence, the enterprise is able to handle situations that have never occurred before, but could occur, and the really great enterprises are able to prevent them from happening altogether. Organizations that do not have that Deep Competence are condemned to learn the hard way. Costs to that enterprise and society are very large.”
- “Expectations are much higher today. Companies are held to standards of not only being able to manage low risks, but the expectation is that they be resilient enough to manage risks that have likely never occurred anywhere before. We are far from having a clear understanding as to what Deep Competence really means.”



- “Directors perform a valuable role. They act on behalf of shareowners. Their role is one of governance, which is different from day-to-day operations. Not all members of the Board of Directors have to have Operational experience, because their role is one of oversight asking difficult questions. But if none exists, it is clearly inappropriate. To meet critical mass, having three on the Board is sufficient. At that point, there is diversity of perspective.”
- “Generally, the Board of Directors does not get heavily involved in the day-to-day affairs of Operations. The CEO and the Management Team are intimately involved, but often even they may have limited awareness of the goings-on if the enterprise is very large. The Board of Directors is critical in laying down expectations of successful operations. There are many examples of companies with poor financial performance over the last twenty years. Some of it was due to willful negligence and some to incompetence. Regardless of who is responsible, the Board of Directors is held accountable.”
- “When it comes to Operational Risk, rules are a bit fuzzy. Great Operational experience in one field does not automatically qualify one to manage Operational Risk in another. They are both Operations, but very different. The high level of standards now present in the financial industry is definitely absent in the energy industry, though it is evolving.”
- “Though much improved over the last fifty years, the audit process today is still going through evolution. By definition, an audit is a bit of a report card. In excess of 90% of audits are a waste of time, with the reason being that they get diluted by the time they get circulated to the Board of Directors. The view is that a bad audit reflects poorly on the Manager. The reality is in any large, complex organization, there are elements that are working and others that are not. A bad audit is a plus because it sheds light on systemic issues that require change. The perception of audits needs to change. The CEO or Board of Directors need to look at bad audits with wisdom and detailed operating experience. Only then are deficiencies corrected. The core issues are hard to perceive at the Board of Directors’ level. Often a significant portion of the problems are the very responsibility of the Board of Directors and the Senior Management team. To some extent, they are providing the boundaries, behaviors, and constraints under which the organization operates. An enlightened perspective exists in some companies, but is probably less common than believed to be.”
- **“No company is so infallible, so robust that they can proclaim immunity from a catastrophic risk.”**

THE CASE FOR A FULL-SPECTRUM SOLUTION

In summary, there are few issues more worrying to senior leadership teams and Boards of Directors than the potential of a catastrophic incident. Such incidents carry the risk of destruction of assets, serious business interruption, regulatory and legal liabilities, and tragic impacts to people. In today’s environment of constant changes to regulations and increased media attention, business leaders and Board members **cannot make the mistake of assessing only technical standards and systems to ensure proper catastrophic risk mitigation.**

Effective management and oversight of all eight of the major drivers is critical in mitigating an organization’s risk for a potential operational and/or catastrophic event. Rather, we advise our clients to consider all **8IGHT DRIVERS®** that can build the potential for catastrophic outcomes.

If you would like more information on this topic or regarding Pilko & Associates’ services and capabilities, please contact:

RICK L. MONTY
Head of Chemical Transactions
rick@pilko.com
W +1 713.357.1000
C +1 614.886.1193

J. MIKE MCCANDLESS
Head of Operational Excellence
mccandless@pilko.com
W +1 713.357.1000
C +1 614.929.8815