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Insights for executives

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Responding to a Black Swan

Principles and protocols for responding to unexpected catastrophic events

Black Swan events are unpredictable and highly impactful – a concept dating back several centuries¹. Other high impact events are deemed to be so unlikely that it is unreasonably expensive to prepare for them. We refer to these collections of unexpected events having negative impacts as Black Swans.

Black Swans are thought to be rare events. However, they occur with regularity, if not increasing frequency. As global populations grow, people tend to concentrate in coastal cities that are increasingly reliant on advanced technologies. As a result, these population clusters are highly vulnerable to the natural and technological disasters that trigger Black Swan events.

Black Swan skeptics retrospectively assert that catastrophic events were fully predictable because post-event investigations identified design flaws, inadequate maintenance, or other patterns that should have signaled the event's likely occurrence. Yet these same experts failed to proactively predict the event's occurrence.

Rare birds

Black Swan events evolve from one factor or a combination of factors, including human error, negligence, malicious actions or acts of nature. Regardless of their cause, they are alike in that they:

- ▶ Occur unpredictably or unexpectedly
- ▶ Develop rapidly and continue for days, weeks, and even months
- ▶ Are catastrophic in scale and broad in scope
- ▶ Present hazards beyond immediate financial risks, jeopardizing lives, long-term health and the environment
- ▶ Involve significant asset damage or loss

¹ The Black Swan concept was first introduced by the poet Juvenal whose phrase "rara avis in terris nigroque simillima cygno" or "a rare bird in the lands, and very like a Black Swan" characterized rare occurrences before the discovery of Black Swans in 1697. In 2007, Nassim Nicholas Taleb further defined and popularized the concept of Black Swan events in his book, *The Black Swan*.

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What's the issue?

The unexpected and catastrophic nature of a Black Swan event necessitates a robust and flexible set of principles and protocols to minimize its impact and enable a rapid recovery. The principles and protocols presented here are designed to aid:

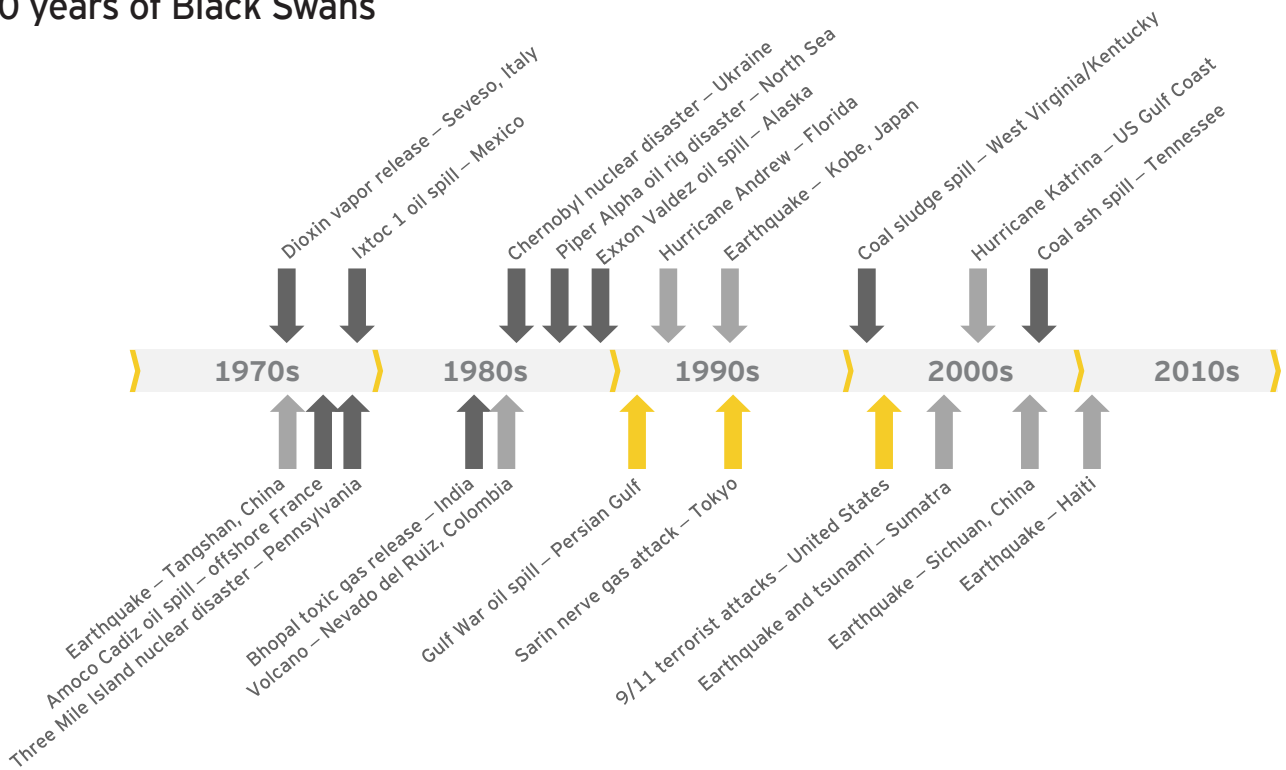
- ▶ Chief risk officers facilitating the implementation of event-response processes
- ▶ Chief operating officers leading the event response
- ▶ Chief executive officers and boards of directors overseeing the event response

This executive-level involvement is necessary to provide a broad, impartial perspective and to garner and coordinate the deployment of necessary internal and external resources for combating these significant events.

While any organization can face a Black Swan, those with a higher potential to be challenged include:

- ▶ Nuclear power plants
- ▶ Oil refineries
- ▶ Oil and gas extractors
- ▶ Chemical plants
- ▶ Hazardous-waste transport and storage facilities
- ▶ Aerospace and defense companies
- ▶ State governments and federal agencies, including the military

40 years of Black Swans



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Why now?

Safety system failures at Japan's Fukushima Daiichi nuclear plant, structural compromise of the New Orleans levees, and the collapse of the World Trade Center Towers remind us of the tragic losses brought on by Black Swan events. While each event was possible, none was predicted.

A Black Swan event, by our definition, is unexpected and catastrophic. What you need are easily adaptable principles and protocols to guide your organization's response.



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How does it affect you?

Knowledgeable, well-intentioned people make reasonable decisions limited by information availability, individual imagination and personal perspective. Because Black Swans emanate from outside these boundaries of expectation, they will continue to plague companies and governments.²

² While some Black Swan events are desirable and produce positive outcomes, the focus of this document is on those events having extremely adverse outcomes.

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What's the fix?

Black Swans remain unexpected, so there is no way to prevent them. But you can prepare to minimize their impact and position your organization to recover as quickly as possible. What companies need is an understanding of the principles and protocols that guide an effective response.

A set of broadly applicable principles underlies the management of any Black Swan:

- ▶ **Definition, ownership, and communication of catastrophic event response protocols.** The time to adopt catastrophic event management protocols and train for a Black Swan event is before a Black Swan occurs. While Black Swans will never exactly match what is developed and practiced, your organization will be better equipped to respond should disaster occur.
- ▶ **Clearly defined, pre-established emergency management goals and values.** Establishing clearly defined emergency management goals and values provides all responders with the objectives needed to rapidly formulate decisions and assess the effectiveness of response actions – even before a formal response plan is developed.
- ▶ **Empowerment of local responders to take action.** Local responders experience an event firsthand. Enabling them to act in accordance with established emergency response procedures can result in a more rapid resolution and containment of adverse conditions.
- ▶ **Parallel planning and execution.** Parallel planning and execution is about prioritization. It encourages the simultaneous progress of several response options, pre-staging later actions so they can be immediately implemented should the preceding response action fail.



“While Black Swans will never exactly match what is developed and practiced, by undertaking the exercise, the organization will be better equipped to respond should disaster occur.”

- ▶ **Inventories of financial, personnel, physical and knowledge resources.** Effective response requires significant financial, human, physical and knowledge resources. Leaders should continually survey team members and outside supporters to build complete inventories of these resources. Resource availability data should be accompanied by appropriate deployment and use-restriction information.
- ▶ **Leverage of external perspective and experience.** Responders should be receptive to external perspectives and prepared to incorporate these into the event's management.
- ▶ **Avoidance of false economy.** False economy is one reason organizations don't plan and execute response options in parallel. However, elevated response costs often pale in comparison to the recovery cost of an accident that expands in duration and geography.
- ▶ **Rejection of political motivations.** Responders at all levels – and particularly those possessing the highest decision-making authority – must remain apolitical when combating with a Black Swan.
- ▶ **Confrontation of moral and ethical dilemmas.** Moral and ethical dilemmas require a leader who is dedicated to making decisions based on well-grounded values. When decisions are made based on merely what is legally defensible, politically expedient, or self- or company-serving, damage to the company's reputation can result and adversely affect its future business operations.
- ▶ **Consideration of contrarian challenges.** Contrarian viewpoints can seem disruptive and time-consuming but play an important role in effective response management. Additionally, contrarian viewpoints from outside the organization can provide a more differentiated perspective against which to evaluate your response.

Black Swan response principles

- ▶ Definition, ownership and communication of catastrophic event response protocols
- ▶ Clearly defined, pre-established emergency management goals and values
- ▶ Empowerment of local responders to take action
- ▶ Parallel planning and execution
- ▶ Inventories of financial, personnel, physical and knowledge resources
- ▶ Leverage of external perspective and experience
- ▶ Avoidance of false economy
- ▶ Rejection of political motivations
- ▶ Confrontation of moral and ethical dilemmas
- ▶ Acceptance of alternative viewpoints

Black Swan response protocols

- ▶ Event recognition
- ▶ Organizational deployment
- ▶ Situation assessment
- ▶ Alternative identification
- ▶ Alternative selection
- ▶ Alternative execution
- ▶ Continuous improvement

These response protocols are not intended to be a step-by-step process. They represent a general activity guide to a Black Swan response. These protocols provide a basis for response that can be easily adapted to each unique situation:

- ▶ **Event recognition.** Black Swans occur in a situation state:
 - ▶ Outside the business continuity plan and asset design basis limits
 - ▶ Inside total loss and abandonment conditionsDefining these boundary states is necessary to effectively recognize and implement the response protocols. The definition set is completed with the addition of methods for reporting the onset of such events.
- ▶ **Organizational deployment.** Rapid staffing of the off-site event response team, led by a single decision-maker (typically the COO), is critical to early containment of event conditions and minimization of adverse impacts. A multidisciplinary team representing the organization's breadth of functional area perspectives and expertise supports the decision-maker. External experts can provide additional unique perspectives.
- ▶ **Situation assessment.** Emergency-response managers must clearly understand the event-specific issues faced and outcomes desired in order to effectively select and execute appropriate actions. Without a well-defined focal point, these managers risk selecting and performing inefficient or inappropriate actions.
- ▶ **Alternative identification.** Response managers should identify a large body of alternatives prioritized for implementation by their estimated ability to yield a maximum number of desired outcomes. Alternative identification starts with the development of option trees that identify those actions and resources needed to address each critical event parameter.
- ▶ **Alternative selection.** The emergency response manager must carefully evaluate each alternative for its associated risks and consequences, benefits, and the organization's implementation capabilities. When available, performance models and risk evaluation tools should be used, and critical assumptions should be documented for future reference.
- ▶ **Alternative execution.** Execution of catastrophic event management plans should follow the established performance standards and procedures for predicted events. These methods often provide the point-of-execution details for an effective response.
- ▶ **Continuous improvement.** Continuous improvement involves critical, ongoing performance assessment of all levels of the organization and the incorporation of lessons learned into decisions, procedures and training programs.

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What's the bottom line?

Black Swans are unexpected, unpreventable, and catastrophic. We don't know when they'll occur, what form they'll take, where they'll strike, whom they'll affect, or how they'll be resolved. But you can be prepared to respond.

The principles and protocols presented here can help guide your organization's response to a Black Swan event. Implemented proactively, these approaches and guidelines can position your organization to recover as quickly and effectively as possible.

Working with your organization's leadership and operations teams, Ernst & Young can help you create, enhance, and validate processes for managing unexpected catastrophic events. We offer proven methodologies and leading practices to help you:

- ▶ **Identify.** Assess your risk appetite and identify the significant risks related to your business operations.
- ▶ **Diagnose.** Evaluate and understand whether your organization's characteristics align with the principles of effective Black Swan response and identify those protocols already in place as well as those that are lacking.
- ▶ **Design.** Once there is agreement on the diagnostic results, assist you in developing initiatives to close the principles and protocols gaps specific to your organization.
- ▶ **Deliver and sustain.** By supporting the implementation of your improvement initiatives, Ernst & Young can help position your organization to respond to Black Swan events as quickly and effectively as possible; minimizing their impact and expediting your recovery.

The benefits of such an approach are meaningful and clear:

- ▶ Protection of human life, health, and well-being
- ▶ Reduction in damage to and loss of assets
- ▶ Minimized environmental impact and lower cost of cleanup
- ▶ Faster return to core business operations
- ▶ Protected or improved reputation

Black Swans will always be with us. They are unexpected and often unavoidable. However, by applying the principles and protocols presented here, leaders can equip their organizations to effectively respond to a Black Swan.

Traits for effective response

- ▶ Safety-conscious work environment
- ▶ Appreciation of the organization's unique risks
- ▶ Questioning attitude
- ▶ Willingness to identify and report problems
- ▶ Openness to internal and external operating experience and support
- ▶ Robust technical competence at all levels

Also check out our expanded whitepaper:



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Black Swan catastrophic events are unpredictable, but there are steps you can take to prepare. The principles and protocols presented here can help you minimize the impact and position your organization to recover as quickly and effectively as possible.

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