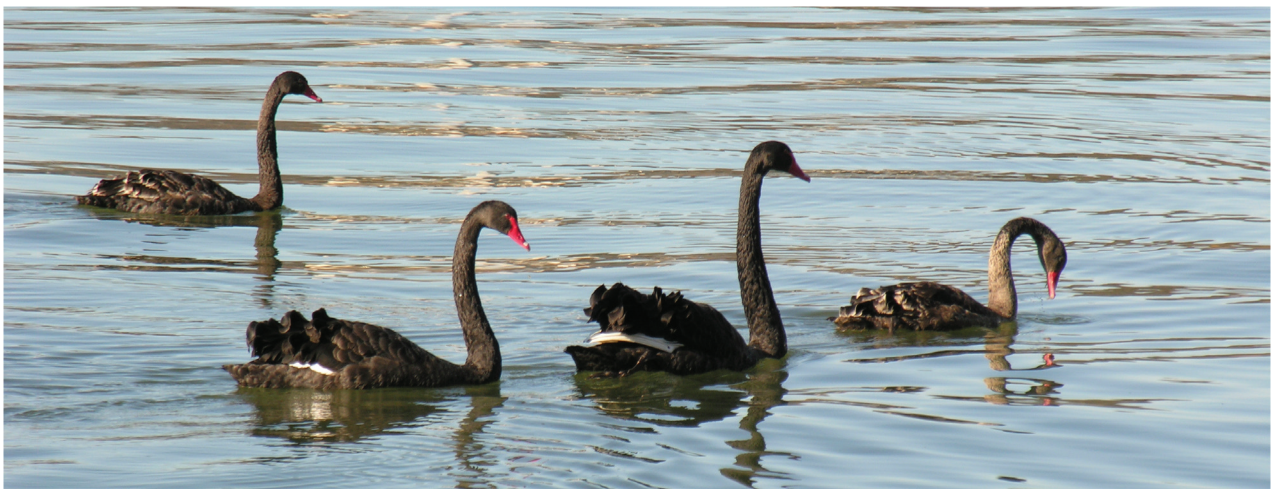
Perspective

Matthew Le Merle



Are You Ready for a Black Swan?

Stress-Testing the Enterprise with Disrupter Analysis

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EXECUTIVE SUMMARY

Black Swans—unanticipated, catastrophic events—are impossible to predict on an individual basis, but they regularly occur. Too often, the boards and leaders of large companies are unaware of the risks involved in these events, unnecessarily exposing their organizations, their shareholders, and themselves to grave consequences.

The solution to this problem is disrupter analysis. Disrupter analyses supplement the everyday work of the enterprise risk management (ERM) function and are often conducted by external parties. They are achieved using a four-step process that maps the shape of the company; collects and synthesizes a broad list of potential high-magnitude, low-frequency events; determines their consequences; and implements preventive measures to ensure that the company is adequately protected.

Companies can never gain complete immunity from Black Swan events. But their boards, executive teams, and ERM departments can and should look more broadly at the risks and consequences of such events, and preemptively prepare for the unexpected.

THE UNEXPECTED ALWAYS HAPPENS

Unexpected catastrophes dominated the headlines in the first quarter of 2011. Japan was hit by a magnitude 9.0 earthquake and tsunami that caused a nuclear disaster, persistent power shortages, and a host of other major societal and economic challenges. China once again limited exports of rare earths, on which information technology, automotive, and energy industries rely. The nations of the Middle East and northern Africa experienced severe political eruptions, including civil war in Libya and regime-shaking protests in Algeria, Egypt, Iraq, Jordan, Syria, and Tunisia, which pushed oil prices above US$100 per barrel. Portugal and Greece tottered on the edge of insolvency, destabilizing their political leaders. Christchurch, New Zealand, was hit twice in quick succession by major earthquakes, and the state of Queensland in Australia suffered the worst floods in recorded history in at least six river systems, resulting in great social and economic disruption.

All of these catastrophes are examples of the kinds of high-magnitude, low-frequency events that Nassim Nicholas Taleb labeled "Black Swans," after a historical reference to their improbability. The Black Swan, Taleb wrote in his 2007 book of the same name, "is an event with the following three attributes. First, it is an *outlier,* as it lies outside the realm of regular expectations, because nothing in the past can convincingly point to its possibility. Second, it carries an extreme impact…. Third, in spite of its outlier status, human nature makes us concoct explanations for its occurrence *after* the fact, making it explainable and predictable."

Whether environmental, economic, political, societal, or technological in nature, individual Black Swan events are impossible to predict, but they regularly occur somewhere to someone. Some observers argue that the frequency of these events is increasing, others that global communication networks have simply made us more aware of them than in the past.

In any case, with the globalization of business, it is increasingly likely that Black Swans carry substantial risks for your company, including negative impacts on your customers, suppliers, partners, assets, operations, employees, and shareholders. Today, not only can a catastrophe in one part of the world affect the sourcing, manufacture, shipping, and sale of products locally, but the interconnections of global financial, economic, and political networks ensure that the knock-on effects of such events ripple around the world.

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THE NEED TO COMPLEMENT ERM

Typically, a large company relies on its enterprise risk management department to identify potential business disruptions, map out their most likely effects, and develop mitigation plans and preventive actions to reduce the risk exposures. After the multiple and severe disruptions of the past decade, starting with the terrorist attacks of September 11, 2001, the ERM functions at most companies have become well staffed with highly professional risk managers, who work diligently to protect their companies across strategic, operational, financial, and hazard risk categories. Through this process, ERM has become an indispensable member of the global functional teams in most large companies.

Over time, however, most ERM groups have little choice but to focus their attention on the frequently encountered risks that businesses commonly face—such as whether the enterprise is complying with regulations, accounting appropriately for its activities, and operating in an ethical and legal manner—rather than on Black Swans. And this is appropriate. First, ERM resources are not unlimited and must be invested in mitigating high-frequency risks, as well as servicing the increasing demands imposed by Sarbanes-Oxley and other financial and regulatory requirements. Second, high-magnitude, low-frequency events stem from far too many and too varied sources for the ERM team to fully identify all of them. Third, the internal politics and cultures of many large companies unintentionally create blind spots that can be very difficult for internal staff members using standard ERM tools to penetrate.

Thus, most ERM teams can assure their boards and executive teams that they have covered the more common risk areas of compliance, ethics, finance, and accounting, as well as safety, quality, and customer experience. But ERM simply does not have the capacity to also monitor high-magnitude, low-frequency disrupters on a continuous or regular basis.

This does not mean that Black Swans can or should be ignored. These events can threaten the survival of companies, and boards and senior leaders are responsible for protecting shareholders and other stakeholders. They must ask, “What else can go wrong?”

STRESS-TESTING WITH DISRUPTER ANALYSIS

The solution to this conundrum is disrupter analysis. Disrupter analysis does not seek to predict Black Swans; that cannot be done. Nor is it meant to replace ERM; it complements ERM. Instead, this analysis—which is typically conducted by an external team working in conjunction with the ERM staff, functional and business unit leaders, and senior management—is designed to periodically stress-test a large company and assess its ability to withstand Black Swans.

Disrupter analysis entails a four-step process that will be familiar to professional ERM managers. It quickly and efficiently maps the shape of the enterprise, determines the breadth of potential disrupters, asks the "what ifs" to determine how severely certain events could stress the enterprise, and then risk-proofs the company as necessary.

1. Mapping the Enterprise
The first step in a disrupter analysis is to map the shape of the enterprise. Shape is determined by a number of factors.

First are the company's geographic footprint, its operations, the composition and construction of its supply chain, and its channel partners and customers. In mapping these elements, it is important to look beyond first-order relationships. Recently, for example, Apple's supply of lithium-ion batteries, used in iPods, suddenly dried up. Unfortunately, as Apple quickly discovered, almost all of its suppliers purchased a critical polymer used to make the batteries from Kureha Corporation, a Japanese company whose operations were disrupted by the March 11 earthquake. In fact, Kureha's share of the global market for polyvinylidene fluoride, which is used as a binder in lithium-ion batteries, is 70 percent. This is why analysis teams must also map second-order relationships (the suppliers of the company's suppliers). In some very critical cases, even third-order relationships should be mapped.

After the shape of the enterprise has been mapped with the help of the ERM staff, finance and other group functions participate in using disrupter analysis to map sources and concentrations of revenue, profit, and capital. Then the often-hidden concentrations that exist in the go-to-market activities—including the business's products, services, channels, and customers—are considered.

Determining the shape of the enterprise must also include a mapping of industry structure, competitive dynamics, and the company's position therein. To determine how a Black Swan event could stress a company, the team needs to understand the foundation on which the status quo rests.

2. Creating the Disrupter List
The next step in disrupter analysis is the compilation of a comprehensive list of potential Black Swan events. The key to creating such a list is casting a wide net by cataloging catastrophic environmental, economic, political, societal, and technological events. The team should add much more to the list than ERM typically does, and continue until the net is wide enough to include representatives of as many different categories of Black Swan as possible.

After the long list is compiled, the events on it are categorized and synthesized. The result is a shorter, more workable list that nonetheless encapsulates and summarizes the Black Swan events that could threaten the company.

3. Asking "What If"
Armed with the enterprise map and a concise list of disruptive events, the analysis team can begin to ask what would happen to the company if the events, or even combinations of events, occurred. The likelihood of occurrence is not a major concern here; these are, after all, Black Swans. Rather, the team needs to determine the relative impact and consequences of an event.

In conducting disrupter analyses for companies, we often find surprising results at this stage. Revelations can include greater concentrations of risk than previously recognized, more severe and unexpected consequences, and, sometimes, seemingly obvious mistakes in how an enterprise has been shaped. The widespread adoption of offshoring strategies has spawned one example. At first, offshoring spread out the exposures and risks of operational disruptions because large companies were expanding their ranks of partners and their geographic footprint. But more recently, new exposures have arisen: Offshoring has created greater concentrations of risk in far-flung locations, where high-magnitude, low-frequency risks are often more numerous in variety and where the likelihood of rapid recovery can be much lower. Consider what might happen to the world's consumer electronics and apparel industries, to name but two, if the recent labor unrest in southern Chinese factories developed into a systemic labor movement such as the West experienced during the Industrial Revolution.

4. Back to ERM for Contingency Planning
When the third step in a disrupter analysis is complete, it is time to turn to contingency planning. Typically, the analysis team systematically generates mitigation options for each major "what if" insight. It looks for options that positively impact multiple risks, and prioritizes them by the magnitude of risk exposure as well as the expense and ease of implementation.

Sometimes companies complete this final step on their own, using their ERM departments. The ERM staff usually participates throughout the analysis and is the most logical and effective group to shore up any major exposures to stress across the company. However, sometimes there are internal complexities that warrant third-party involvement. Also, most boards prefer to have an external, objective set of eyes involved, especially when recommendations include critical strategic and operational issues.

CONCLUSION

No company can be completely prepared for every possible Black Swan event. But the board, the executive team, and the ERM staff can complement the day-to-day work of the ERM function with periodic disrupter analyses. These analyses can ensure that the company has adequately focused its attention on high-magnitude, low-frequency events, stress-tested its fitness in the face of such events, and preemptively prepared itself for unexpected catastrophes.

About the Author

Matthew Le Merle is a partner with Booz & Company based in San Francisco. He works with leading technology, media, and consumer companies, focusing on strategy, corporate development, marketing and sales, organization, operations, and innovation.

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