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COMMENTARY

Be the ant, not the grasshopper: Preparing for the next black swan event

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Aesop's fable of the ant and the grasshopper is a lesson for how to use our current experiences to prepare for the next unknown catastrophe (black swan event). The ant spends the summer months preparing for winter by storing food, whereas the grasshopper enjoys the sunshine playing music. Come winter, the grasshopper is unprepared, overwhelmed, and blames the busy summer schedule. The connection between this fable and the current global pandemic is that the present time may feel overwhelming (Rudolph et al., 2020) but is the ideal time to prepare for the next unforeseen event.

In this commentary, we provide recommendations for organizations to help transform their current struggles into learning experiences in preparation for the next black swan event. A black swan event is characterized by being improbable, carrying extreme consequences, and being retrospectively predictable (Flage & Aven, 2015). During these catastrophes, most business leaders have become preoccupied with maintaining safety, avoiding disruptions in operations, and preventing permanent closure. These obstacles are similar to the daily demands of operating a high reliability organization (HRO; e.g., nuclear power plant; naval ship). We review how HROs approach resilience and learn from current circumstances to prepare for the future. Using this framework, we provide tips and discussion questions to help business managers lead resilience-planning workshops within their own businesses.

Resilience strategies of an HRO

HROs are systems that operate in an environment of high safety risk, high complexity, and tight coupling (Roberts, 1990). High complexity indicates that failures can occur in many different ways or sequences. For example, a fire on a naval flight deck can be caused by many different scenarios. Tight coupling indicates how the technology or functions of the organization are highly interdependent, similar to a link in a chain, and thus a failure somewhere in the system can rapidly cascade into a total system failure. Research into the workings of HROs (Christianson et al., 2011) has uncovered common management and strategic elements, which help them adapt:

- Preoccupation with failure: Avoid failure at all costs and are relentless in identifying, correcting, and learning from errors.
- Reluctance to simplify: Believe that complex problems do not have simple solutions.
- Sensitivity to operations: Create mechanisms and feedback loops to effectively report concerns and depend on the front line for system information.
- Commitment to resilience: Adapt and improvise through cross-functional collaboration.
- Deference to expertise: Expertise, rather than status or authority, is what is valued.

Unfortunately, there is no magic switch to management style or strategy to instantly begin operating with the efficiency and precision of an HRO. Successful safety leadership and culture can be improved, however, using events as an opportunity to learn and prepare for the future (Spector, 2020; Weil & Apostolakis, 2001). Here is how your organization can use the current pandemic as an opportunity to prepare for the next (inevitable) black swan event.

How to prepare for the next black swan event

During a global pandemic, or any global black swan event, most organizations are thrust into the perils of operating within environmental constraints similar to those of an HRO. For example, a restaurant operating through this pandemic has faced increasing complexity in all operations (workforce disruptions, changing government guidelines and regulations, changing customer demands) as well as tight coupling (managing inventory to avoid food spoilage, dependence on delivery services). Although the nature of the next black swan event is unknown, organizations can prepare for the inevitable by modeling the actions of an HRO. To facilitate this learning experience for your organization, we provide several discussion and forecasting questions that can be used in a workshop within your own organization.

Tip 1: Recognize (and involve) your experts

A deference to expertise means that the most qualified or experienced personnel in an organization, rather than the most senior ranking personnel, are leveraged to plan for and manage events. For example, in a nuclear utility, when determining emergency plans, the president or vice president of the organization may not be the best suited to the task, and a lower ranking but more knowledgeable person who knows the workings of the organization's day-to-day operations may be the right choice to lead the effort in fabricating a robust emergency plan. Another HRO element—sensitivity to operations—suggests that the employees closest to the work would be the most knowledgeable about the work and the constraints surrounding it. Therefore, when preparing for and reflecting upon various events, ensure that the organization involves the experts of the various facets of the organization to help guide those plans. This particular tip is the foundation for tips 2 through 6 as well, as expertise within the various domains will allow for a more comprehensive discussion of the organization's capabilities to adapt to and navigate a black swan event.

We suggest the following facilitation questions:

- What were our sources of knowledge and information during the pandemic?
- What questions were left unanswered or answered inaccurately by our sources of information?
- Which employees were most involved with the business during the pandemic?
- Which employees were most affected by the pandemic?

Tip 2: Identify the resilience forks

It is important to recognize that resilience is not solely determined by overcoming a major event; rather, it is a strengthening process when facing a sequence of small adversities. Black swan events, especially the current pandemic, can be deconstructed into a combination of smaller adversities—or *resilience forks* (moments of uncertainty and decisions made by the organization throughout the event). We call these smaller adversities resilience forks because they provide opportunities for learning and help you identify all of your strengths and weaknesses. Aim for at least five resilience forks, but there are no limits. Here is an example of how one business owner listed their resilience

forks during the current pandemic: (a) pandemic is an international issue and our business is not affected; (b) government forced shut down of our business; (c) loss of revenue and uncertainty in covering costs; (d) uncertainty in legal issues, business insurance claim, and rules with opening the business; (e) understanding safety concerns if business was to resume normal functioning; (f) managing workforce remotely or returning them back to the workplace; (g) identifying the needs of customers and finding new customers; (h) uncertainty if government will shut down business operations again. The understanding of resilience forks will help address Tips 3 through 6.

We suggest the following facilitation questions:

- What were the pandemic adversities that had the most significant effect on our business?
- When and how did our expectations (e.g., when it would end; what resources would be available) of the pandemic change/shift?

Tip 3: Reflect upon your strengths

Various organizational strengths will emerge while facing a black swan event, and it is essential to recognize and reinforce these strengths for the future. For each resilience fork, identify what you did well. It is important to note that what was a strength at one resilience fork may be less valuable at another resilience fork. For example, having a large workforce filled with motivated workers is great when encouraging them to return to work or work remotely (resilience fork #6), but it also creates a significant payroll issue (resilience fork #3). This conflict is common and demonstrates the complexity of your organization and importance of deconstructing the black swan event into resilience forks.

We suggest the following facilitation questions:

- What did our organization do particularly well during each resilience fork?
- How can our organization's strengths be leveraged effectively to adapt to new realities of work going forward?

Tip 4: Reflect upon your weaknesses

This process identifies organizational weaknesses that could lead to failure in a black swan event and identifies areas for improvement. This exercise is based on the notion that resilience involves the process of learning from each small adversity. It is important to keep egos in check and avoid punishing poor performing workers. Encourage yourself and others to discuss errors and mistakes made during each resilience fork as an opportunity to learn. In other words, you are fostering an environment of psychological safety. This is an opportunity for organizational leaders to act as coaches.

We suggest the following facilitation questions:

- During each resilience fork, what resources or capabilities were threatened most and why?
- What steps can be taken to strengthen these weaknesses? Can these efforts, even to a lesser degree, be continued long term as part of everyday operations?
- For each resilience fork, what are examples of best practices demonstrated by other businesses? Can these best practices be benchmarked against our organization to determine areas for improvement?

Tip 5: Engage the community

There are several reasons for engaging the community during black swan events. Global emergencies result in greater reliance upon the local community because interstate and global operations are often slowed or halted as a safety precaution. These circumstances of a black swan event create new opportunities for a business to provide products/services to the local community. This relationship is reciprocal, so it is essential to also communicate to the customer base the business's struggles and needs. Additionally, connecting and building relationships with other businesses within the community allows for a pooling of resources to ensure that the needs of the community are met while keeping all the businesses afloat. The process of engaging the community also is likely to have an effect on the psychological health of workers. The greater number of committed and meaningful ties a person has can foster psychological hardiness—an increased likelihood of overcoming traumatic events, improvements in job performance, and greater well-being (Eschleman et al., 2010; Kobasa et al., 1982). Last, it is important to recognize that by engaging the community, you are also increasing the interconnectedness of your system (tighter coupling). Roberts (1990) proposes that there must be a high degree of accountability and responsibility when an HRO becomes more interconnected—so be sure to assign a manager to this operation similarly to how you would any other valuable operation within your business.

We suggest the following facilitation questions:

- Which community members and businesses should our organization have communicated with during each resilience fork? How effective was this communication (if it occurred)?
- What lesson can be learned from businesses that were successful? How can we collaborate with these businesses moving forward?
- How can our organization leverage its strengths/capabilities to foster relationships with the community now (prior to a future black swan event)?
- Who will be responsible for engaging the community moving forward?

Tip 6: Develop contingencies and continuity plans

Use the information acquired through Tips 1 through 5 to develop contingency plans, which anticipate the ways in which the organization's functions could be affected, and devise strategies to navigate those threats. Use the resilience forks and defer to your experts to help identify needs for these contingency plans. For example, one of the compliance requirements for operating a nuclear power/research facility is to have a robust emergency preparedness program. This requires the organization to perform several emergency management exercises (ranging from table-top to full-scale events) that simulate a variety of scenarios, some of which are high-probability events and some of which are statistically unlikely to occur. It will be important to develop several contingency plans and maintain accountability to practice these contingency plans even during normal operations.

We suggest the following facilitation questions:

- Is our organization equipped to handle the effects of several resilience forks?
- How often does our organization update and refine these contingency plans for these resilience forks?
- How does our organization plan to test these contingency plans? What are our evaluation criteria to determine the effectiveness of these plans?

Summary

By modeling elements of HROs, organizations can plan to increase their resilience and ability to withstand the effects of another large unknown event. This process should begin now through a process of targeted introspection and learning. The tips provided, however, are only effective when paired with accountability and responsibility moving forward.

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