

ATTENTIONAL TRIANGULATION

Picking Up the Signals That Trigger Crises

By CLAUS RERUP

All too often, companies ignore the threat of a catastrophe. They do so because the probability of such events is low, and their attention is directed toward other pressing issues. In being oblivious, however, they may lose sight of hidden problems that trigger subsequent crises. They may also miss out on valuable opportunities for learning and new business opportunities.

The 2003 Columbia space shuttle explosion during reentry, caused by falling debris during the launch that damaged a wing, exemplifies this short-sightedness. Although tile damage on the shuttle from falling debris was a known problem even in the 1980s, NASA managers got used to such damage and downgraded the risk. As they changed their beliefs about the risks associ-

ated with this issue, they gradually turned their attention to problems considered riskier. Seven astronauts died as a result, and the space shuttle program was suspended for years, delaying the construction of the International Space Station.

There are many examples of organizations in industries such as car manufacturing, financial services and oil exploration that took their eyes off the ball, with unfortunate consequences. To keep this from happening, companies need to hone their attention skills. This process must occur at multiple levels throughout the organization.

To this end, I have developed a framework for thinking about attention. I have also identified several steps that companies can take to improve their attention quality.



The concept of triangulation can help safeguard organizations against managers overlooking potential threats. By applying this concept, companies can develop the awareness needed to pick up on useful signals about a crisis in the making.

Furthermore, attentional triangulation provides companies with a fine-tuning device that helps them zoom in on opportunities, focus on market trends and receive vital cues that might open pathways to new business.

Pushing Our Luck

Rare events will likely have a growing impact on companies and their operations. In many ways, it seems that society is pushing its luck when it comes to taking risks.

Take technology. In the era of Big Data, employees and managers need to analyze vast quantities of information and often make rapid decisions based on what they believe the information is conveying. Swift action increases the risk that these individuals will misinterpret the data.

For instance, the financial industry stands out for using instruments that it never fully understood. Because all was well for a while, few paid close attention to threats that now seem blindingly obvious. Trusting in abstract models and tools without any underlying knowledge of how they actually work ultimately means that “rare” events will become less rare.

In theory, regulation is designed to keep crises at bay. However, it is not keeping pace with the complexity involved in many current business processes. Experts studying these issues agree that using simple regulations to deal with complex issues is not effective. Frequently, neither the regulators nor the regulated

fully understand the risks posed by these practices, so it is doubtful that relying on legislation alone will prevent future crises from happening.

What’s needed is a deliberate framework that helps firms gather information over time and across levels, that broadens understanding of relevant issues, and then embeds that learning in specific organizational practices, structures and designs.

Attentional Triangulation

Using research on learning and attention, I have developed a concept called *attentional triangulation* to help companies spot potential problems early on. It encompasses three dimensions or abilities. To understand the role of each, I will use the analogy of a museum.

1. ATTENTION STABILITY. This is the ability to sustain attention on a particular issue over time. Imagine you are visiting a museum. When you first enter, you see various paintings on the walls. One painting catches your eye, so you go over to examine it more closely. The more you stare at the painting, the more details you see – different shades of color, the brushstrokes – and your understanding of the work grows. As you do so, however, you become less aware of the other paintings in the room. Your focus is intense, but is limited to this one specific work.

Attention stability involves this deep but narrow awareness of what is happening in a specific context. It is important for organizations to have attention stability because certain features of a problem are fathomable only when considered in depth over a longer period.

2. ATTENTION VIVIDNESS. This is the ability to see different issues concurrently and to identify patterns. In the museum, you might step back and scan the various paintings in the room. You start to see connections between one painting and another – perhaps in the style, technique or use of color. The complexity of each painting finds its place within an overall context.

Organizations need this ability to focus on many issues at the same time, analyzing and interpreting the complex, often contradictory information that arises. It is only by moving from attention stability to attention vividness that organizations can start to pick up early warning signals and transform those signals into preventive actions.

EXECUTIVE SUMMARY

Drawing on extensive research on the rare crises faced by Novo Nordisk and the Roskilde Festival in Denmark, this article presents a framework for thinking about attention. It identifies several steps that companies can take to improve their attention quality. Attentional triangulation encompasses three di-

mensions: stability, vividness and coherence. Managerial decision-making to prevent rare crises lies at the intersection of these dimensions. By implementing a system of attentional triangulation, companies improve their capability to pick up on signals that impending crises give off before they happen.



Attentional triangulation doesn't happen by chance. Certain mechanisms need to be in place, so that there is an intelligent understanding and significant deliberation of relevant issues and opportunities.

3. ATTENTION COHERENCE. This is the ability to coordinate attention stability and vividness at different levels. Imagine that the museum is quite large. As you wander through various rooms on different floors, you ask yourself: "What is the overarching idea being expressed? What did the curators have in mind?" You start to coordinate your thoughts about what is really going on.

Today's companies comprise many highly specialized departments, activities and hierarchies. This dispersion makes attention coherence essential for perceiving possible threats. Once stability and vividness have been established, coherence needs to be introduced by coordinating individuals, teams, departments and command structures.

Taking the analogy a step further, imagine you've gone to the museum with a group of friends. You've all gone through the same rooms, but seen different things from diverse perspectives. Afterwards, you each discuss what you saw. You realize that, although you tried to see everything, you missed a lot that your friends noticed.

Likewise, within a company, some people are tasked with looking at specific areas of operations very carefully. They are doing important work, but they may overlook areas beyond their narrow specialization or field. They may need to step back and expand their view before they can spot threats on the horizon.

The goal of coherence is to coordinate the collective attention of people, units and functions. By sharing information and diverse interpretations of data, the organization is better able to reduce confusion, identify important cues and understand what's really happening in the wider environment.

Attentional triangulation refers to the combination of all three dimensions. It is not the sum of their parts, but rather reflects their integration and interrelatedness. Managerial decision-making to prevent rare crises lies at their intersection. It balances generality and simplicity with clarity and depth.

Attentional triangulation doesn't happen by chance. For it to work, certain mechanisms need to be in place to coordinate how information is captured, so that there is an intelligent understanding and significant deliberation of relevant issues, problems and opportunities.

Learning From a Crisis

In an article published in *Organization Science*, I examined how Novo Nordisk, a world leader in diabetes care, used attentional triangulation to recover from an unexpected crisis.

In 1989, Novo and Nordisk, two leading Danish pharmaceutical companies that were competitors in the field of insulin manufacturing, merged to create Novo Nordisk. Although it made sense for them to join forces, the merger distracted middle managers from attending to several weak cues that were taking shape in the wider regulatory environment. Employees and managers in manufacturing noticed these changes, but their requests for improving quality assurance were ignored by superiors who were focused on the merger.

Eventually, in 1993, Novo Nordisk's senior managers were shocked when a mock inspection revealed that the firm might lose its license to sell insulin in the United States. Nothing was wrong with the quality of its product. Nonetheless, Novo Nordisk was not providing the documentation of its manufacturing process that U.S. authorities required before they would allow Novo Nordisk to distribute insulin in the United States.

As Novo Nordisk did not want to sell a product in one part of the world that was not perceived as satisfactorily manufactured in another, it made a tough choice: It discarded six months of insulin that was supposed to be sold in the United States. It then implemented a new validation and quality system.

Yet this decision created another problem: To ensure that its U.S. customers still got their insulin on time, Novo Nordisk had to ask its



main competitor, Eli Lilly, to temporarily supply insulin to its customer base in the United States.

As with every business crisis, the events at Novo Nordisk presented a valuable opportunity to learn from oversights in the past and take steps to prevent similar events from recurring.

In analyzing what went wrong, Novo Nordisk discovered that some middle managers were devoting too much attention stability and vividness to certain issues. For example, some middle managers were so focused on ensuring the merger's success that they didn't listen to warnings from frontline employees. As such, they did not notice that the regulatory environment was changing.

This lack of attention coherence to regulatory changes across the organization was caused by the hierarchical and bureaucratic chain of command that had arisen since the merger. This development reinforced a tendency of not speaking up about potential problems envisaged further down the line.

To remedy this situation, Novo Nordisk focused on boosting its quality assurance department from 180 to 620 employees. By adding more people and requiring them to interrelate, Novo Nordisk increased its attention capacity.

Novo Nordisk also came up with a system designed to coordinate attention to weak cues across the chain of command, known as the Novo Way of Management. Based on principles such as openness, continuous learning and dialogue, the firm's senior managers encouraged unit managers to collaborate and share knowledge about emerging issues and respond to rare events in a coordinated way.

Although the crisis cost the company an estimated \$100 million in lost sales and investments in new manufacturing facilities, the changes it made to foster attentional triangulation meant that Novo Nordisk was selling insulin in the United States within a year, and today it retains its leading position in insulin manufacturing.

Compensating for Asymmetry

In a separate study with Morten Thanning Vendelø from Copenhagen Business School, I related attentional triangulation to a tragedy that occurred in 2000 at a famous rock music festival in Denmark, in which nine people were crushed to death. A similar tragedy occurred in 2012 at a rock concert held in the Madrid Arena on Halloween. How does insufficient attentional triangulation contribute to such tragedies?

As part of our research, Vendelø worked as a security guard for the festival. This perspective let us directly experience the sheer magnitude of the attention challenges faced by employees on the frontline. We studied stability, vividness and coherence in relation to the behavior of the festival organizers and the crowd.

At the Roskilde Festival, as with many such concerts, individual safety guards were looking at a very narrow slice of the audience (individual concertgoers). In contrast, the safety team manager or coordinator working behind the scenes was in charge of seeing the big picture (the concert). In addition, the context was highly complex: some 50,000 people screaming and pushing in front of the stage, with very loud music and low visibility due to rain and fog.

The problem arose when audience members collapsed and crowd surfers fell on top of them. The guards on the frontline understood that there was a problem, but they couldn't communicate the message to those who could stop the concert: the coordinators behind the scenes.

This situation represents an attentional delay, in which one party sees the problem before the others do, but doesn't have the power and authority to resolve it in time. At some point, every organization must confront this question: How can it eliminate asymmetric attention fast enough for all the members on the team to refocus their attention on the same problem and take concerted action?

At the Roskilde Festival, concert organizers employed simple video and radio technology to create a system that allowed the guards to

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ambiguity and heterogeneity influence variations in distributed attention, sense-making and learning processes over time. His work on the Estonia ferry disaster, the Roskilde Festival accident, the rise and fall of Learning Lab Denmark, and the unexpected crisis faced by Novo Nordisk each draw upon a minimum of eight years of data collection.



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communicate instantaneously with the coordinators, who had a bird's eye view of the crowd. Actions that used to take up to 10 minutes can now be carried out in seconds.

Is there technology or a simple system that your organization can implement to speed exchanges, bypass physical restrictions and eliminate asymmetric attention?

Time for a Second Opinion

In business, especially with entrepreneurial endeavors, there is a strong tendency to move quickly. Indeed, several studies – including my study of Novo Nordisk – have suggested that speed can enhance attentional triangulation and the quality of collective attention processes.

When decisions are made too quickly, however, important subtleties can be missed, including emerging issues or the big picture. Acting too fast limits the opportunity to benefit from information that is revealed only over time. It can also lead to a shallow understanding of complex issues.

With Vanessa Strike from Rotterdam School of Management, I conducted a study about the Most Trusted Adviser (MTA) in family businesses. The role of the MTA is to help direct and triangulate the attention of family business leaders to key issues and cues in the environment.

We found that deliberate attention delays introduced by the MTA – attending to cues more slowly, rather than faster – can actually augment attention quality. This is because slowing down perception allows the time needed to gain other points of view, which contributes to attention stability and vividness. This doesn't mean delaying decisions for years – we're talking about modest delays of a day or a week or two at most.

Our study also highlighted the value of a third party in helping organizational leaders identify cues they may not see on their own. Even when the leaders of the family businesses we studied did not end up following the MTA's advice, they were at least compelled to

consider alternatives and pay attention to issues that they would not have seen otherwise. In this way, the presence and input of a third-party adviser can boost the overall attention quality of business leaders.

Reactive vs. Proactive: Which Are You?

There are two ways you can think about crises: You can sit back and wait until something happens, then brace for the impact; or you can realize that unexpected, rare events emit signals, albeit sometimes weak ones, that foreshadow something that is about to happen, and develop systems to detect those signals.

Although such systems cost money and there is no guarantee that even the most robust attention system in the world will prevent a crisis, critics of a proactive approach need to be reminded that *crises* cost money. The real question is whether it is cheaper to wait for the crisis and pay for the damage later.

Above all, you need to ask yourself what kind of corporate culture you are looking to create: one that fosters openness to information-sharing, where employees and managers are willing to speak up and listen to each other, or a culture of simply waiting around for things to happen?

Organizations that have robust levels of attentional triangulation seek to engage the entire workforce and encourage everyone to expand their awareness of potential problems on many levels. Companies that do this most successfully are those that do it because they believe it's the right thing to do. It's one thing to say you care about improving attention quality through triangulation when you can see the direct consequences; it's quite another to sustain your commitment to attention quality when you are uncertain of the outcomes. True leadership is based on this latter principle.

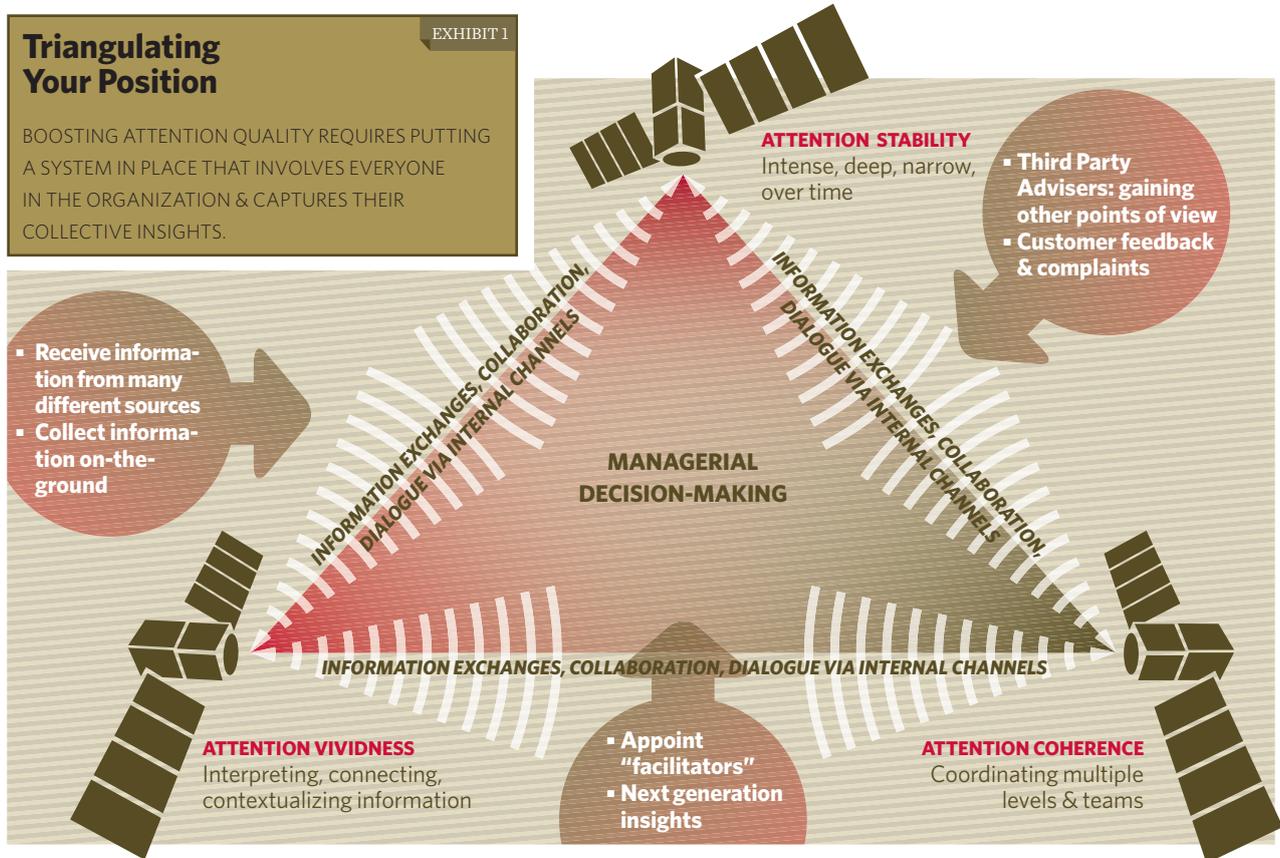
For this reason, the role of senior and middle managers is crucial. Do they prioritize and deliberately enact organizational designs that



Triangulating Your Position

EXHIBIT 1

BOOSTING ATTENTION QUALITY REQUIRES PUTTING A SYSTEM IN PLACE THAT INVOLVES EVERYONE IN THE ORGANIZATION & CAPTURES THEIR COLLECTIVE INSIGHTS.



facilitate attentional triangulation? Do they proactively encourage everyone to speak up about threats and opportunities? Do they say, “This is how we run our business, because we believe attentional triangulation is important?” Answering this question in the affirmative is central to making attentional triangulation a way of life.

Strengthening Your Attention

Ninety-five percent of the ideas put forward in a company may be noise, and therefore irrelevant. You need a lot of noise, however, to find the 5 percent, or even 1 percent, that yields useful suggestions that might prevent a crisis and identify valuable opportunities. You never know where a good idea will come from, or when someone will say, “Something is not working right here.”

Implementing a system that boosts attention quality does not have to be expensive. Indeed, it may save money by helping the company avoid costly problems in the long run. Even small and medium enterprises can increase their attention quality without too much cost. To get started, companies should consider taking the following steps. See **Exhibit 1**.

EXPAND YOUR RADAR. Start by looking in different directions. Review your channels of information. Are you receiving information from many different sources? As Vendelø and I found when we studied the perspective of guards at the Roskilde Festival, frontline collection of information can be invaluable. Organize sessions with NGOs, or some other stakeholder with whom you don’t normally interact, to gain a different sample of raw data from the field.

INVITE CRITICISM. Don’t shield yourself from criticism – invite it. All too often, people close their ears to complaints about their products and services. Instead, have open conversations with exactly those customers. You never know what will arise as a result. Some firms, for instance, create stakeholder relations departments whose mandate includes talking to company critics and considering their perspectives.

RETHINK ORGANIZATIONAL ROLES. Novo Nordisk has officially rebranded certain managers as “facilitators,” who are a cross between an auditor and a coach. An important part of their job is to seek out alternative information and to identify



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problems that are being overlooked. They visit different organizational units and interview employees there to uncover concerns and issues that are not being openly discussed. They then prepare a report and an action plan, with a set timeline for making changes and improvements.

GET PEOPLE TO FOCUS ON TRENDS. Encourage people to start imagining what they think is going to happen in the future regarding your product or service. Maybe weave this effort into their job descriptions as something they have to deliver. Eventually, as employees seek information and trends, this practice will become a natural habit.

STRENGTHEN INTERNAL COMMUNICATION CHANNELS. People need forums for talking about emerging issues. One CEO of a company with more than 60,000 employees wanted to encourage more open discussion of problems, so he decided to make his e-mail inbox public. The number of e-mails he received went down, and he found that discussions began to flow via other internal social media channels. Strong internal communication helps to keep everyone on the same page and facilitates joint problem solving.

INVOLVE YOUNGER GENERATIONS. At the Richard Ivey School of Business in Canada, students carry out projects with companies as part of their degree requirements. Some projects last up to three months. These companies value the insight of the students, whose unique ways of looking at the world help to identify potential problems and highlight areas never considered before. Perhaps there are similar ways that your organization can collaborate with universities, or introduce reverse mentoring programs, to gain insights from the next generation. A related idea involves appointing certain employees to serve as devil's advocates, whose job it is to argue the contrary point of view. As many senior or middle managers are older, appointing younger workers to this role may help to counterbalance groupthink.

Don't make the mistake of treating these simple steps as yet another management procedure or success formula instituted by top executives. Remember, the motivation behind these steps is to improve attentional triangulation and attention quality. As such, it is more of an ongoing journey that requires everyone throughout the organization to triangulate their position in relation to the three key dimensions of stability, vividness and coherence. By being proactive, managers can prepare their organizations to pick up on the signals that impending crises give off before they happen. □

■ TO KNOW MORE

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