Building Organizational Resilience

To cope—and thrive—in uncertain times, develop scripted routines, simple rules, and the ability to improvise.

AUTHORS

Fernando F. Suarez
Professor, D'Amore-McKim School of Business

Juan S. Montes
Associate professor, Carroll School of Management

Successful organizations all have well-established routines for getting things done. The task may be as lofty as acquiring a competitor or as prosaic as filling out a time sheet, but if you look closely, you'll find a reliable process to guide you through it. These routines are often taken for granted in stable periods. However, they tend to break down when a company faces high levels of uncertainty or needs to move quickly in a crisis. Organizations scramble to make adjustments on the fly—with varying degrees of success. Before the next crisis hits, it's wise to spend time thinking systematically about the granular nuts-and-bolts processes you use—and to experiment with alternatives.

Researchers have identified three broad approaches to getting work done, and what they've learned can help managers respond more effectively to highly changeable environments. The first approach is the one we've just described: *organizational routines,* which are efficient when work is predictable. The second approach is *simple rules,* or *heuristics*—rules of thumb that help you speed up processes and decision-making and prioritize the use of resources in less-predictable contexts (for example, "We invest only in projects with a projected ROI of 10% or more"). And the third is *improvisation*—spontaneous, creative efforts to

When to Try Each Approach

Much of the time, organizational routines can guide how work gets done. But if resources are scarce, things are moving fast, or the terrain is unpredictable, simple rules and improvisation should be in the mix.

	Routines (scripted work processes)	**Heuristics** (rules of thumb that help simplify decision-making)	**Improvisation** (spontaneous, ad hoc responses to a problem or opportunity)
EXAMPLE	*“Follow this checklist to prep for surgery.”*	*“Prioritize big-ticket client work in a crunch.”*	*“Employees must stop working in the office immediately. Where do we start?”*
BEST WHEN	You’re in familiar territory.	You need to make decisions faster than usual; existing routines aren’t effective.	You’re on uncharted ground with a high degree of uncertainty.
CONTEXT	The environment is stable.	Key assumptions remain valid; decision-makers understand the problems they encounter.	Key assumptions no longer hold; decision-makers need to experiment to figure out what will work.

address an opportunity or a problem (for example, when a team figures out how to do manual production because a factory’s automated line has suddenly broken down).

Surprisingly, nobody has ever studied how those different approaches can be used as a tool kit. Yet any organization—or team—will do better if it can move easily among them. People can improvise in the face of a crazy-seeming, unexpected situation, learn from the improvisation, and eventually develop a simple rule based on what they’ve discovered, for example. Or they can revise an organizational routine after experimenting with new approaches to a particular task. Fluency in all three modes can improve performance and enhance resilience under any circumstances. And if an organization faces extreme uncertainty, that fluency becomes essential. In fact, we believe that the ease with which teams refashion how specific tasks get done—whatever the level of turbulence—is the defining capability of a resilient organization.

We recently had a chance to think more deeply about that hypothesis while writing an article for *Organization Science* about a Mount Everest climb that one of us (Juan) had been lucky enough to take part in. In it we explored how the three approaches had been used on the expedition, how they interacted, and which worked best under what circumstances. To be sure, the expedition involved far more pressure and unpredictability than most HBR readers normally have to deal with. But what we learned can help organizations cope better with whatever challenges they face. And if 2020 has taught us anything, it’s that everyone needs to prepare for higher levels of volatility, uncertainty, complexity, and ambiguity.

THE RESILIENCE TOOL KIT ON MOUNT EVEREST

The Kangshung Face is the most remote, least explored side of Mount Everest. It’s a difficult route to the summit that as of 2020 only three teams had completed successfully. On Juan’s expedition a team of six climbers, who had trained together for almost two years, spent 41 days on the mountain. (It was a smaller team, with fewer sherpas and a briefer stay on the mountain, than was typical.) Three climbers reached the summit—one more than the team had thought could manage it—with no serious accidents and with minimal use of oxygen. The challenges that arose along the way offer insights into how a skilled team moves between modes of working as the context changes.

As the climbers, sherpas, and porters settled into base camp, at 17,700 feet, they relied on well-known routines that were suited to relatively benign conditions. These detailed processes increase the efficiency of a climbing team and help keep it safe. They script out how the team sets up camp, prepares backpacks and tools, coordinates shifts and roles for the ascent, and maintains the ropes. Rodrigo Jordán, the expedition leader, led planning sessions every evening and had the final word on the most important decisions.

As the next phase of climbing began, the environment changed in often dramatic ways, and some of the organizational routines broke down. The first big challenge on the route is an uncommonly treacherous 4,000-foot wall of rocks and ice. (It’s the reason so few expeditions attempt this side of Everest.) For 12 days the climbers “opened the route” by choosing a path and attaching ropes up the face, going incrementally higher but returning to base camp every night until they were able to establish Camp One, just past the wall. Once the ropes were in place, the following day’s climb became faster and safer. The route is technically difficult, and the climbers were always “counting the minutes

John Kuczala

Made in Germany
KUM
MAGNESIUM

before the next avalanche," in the words of one participant. Normally the expedition leader coordinates this kind of ascent, but a few days in, the climbers realized that Jordán, who was at base camp, didn't have enough information to make timely decisions and that this was putting them at risk.

The team discussed this breakdown in the organizational routine over dinner several days running and eventually developed a simple rule: *The first climber on the rope calls the shots.* That heuristic sped up decision-making by empowering the climber who was leading the ascent at any particular time. It made the group into an essentially flat organization while routes were being opened up. Jordán continued to make all other decisions and to coordinate activities during the evening planning sessions.

Another organizational routine had begun to break down at the start of the climb, when the team was forced to leave 300 pounds of supplies behind because of a disagreement with Chinese authorities. The problem intensified when the team's sherpas were hit by an avalanche. Though they suffered only minor injuries, they were understandably concerned for their safety and negotiated carrying lighter loads. In response to having far fewer supplies than planned, the team developed two simple rules. The first was *Carry only the supplies that the climbers who are going to the next stage need.* (Normally, climbers bring buffer supplies to the upper camps, of which there were three on this expedition.) The second was *Always return to sleep at the lower camp.* This made sense for a number of reasons, the primary one being that less oxygen would be needed at lower camps.

The next stage of the trek, up a long glacier, took 17 days. It went slowly because the climbers were walking through deep powder and reacting to a higher altitude (21,000 to 23,000 feet). This stretch was technically easier than the wall but had hard-to-anticipate crevasses and a higher risk of avalanches. Though the plan was for only two climbers to summit the mountain, during this phase a third member (Juan) turned out to be in better physical shape than expected. He had a brief radio conversation with Jordán, and they decided together that he would join the others in attempting to summit. This improvisation carried risks: Juan didn't have a sleeping bag, so the original two summiters would have to share theirs with him, and because of the diminished supplies, they'd also have to share their oxygen, leaving them somewhat short. But Jordán concluded that the team had a better chance of reaching the top with three climbers than with two. This decision, like most decisions about improvisation, had to be made quickly; there wasn't time to build consensus. (In contrast, groups usually adopt a heuristic only after extensive discussion.) That meant it posed another risk: alienating other members of the team.

How Hospitals Used Routines, Simple Rules, and Improvisation to Deal with Covid-19

During the spring of 2020, when patients suffering from Covid-19 threatened to overwhelm hospitals, health care professionals responded not just with courage but with ingenuity. Stories of their resourcefulness filled the news and social media.

As we look at these reactions to a novel situation, however, we see something else: examples of how people utilized new routines, heuristics, and improvisation to work more quickly and effectively.

New routines. Normal hospital practices were disrupted, but some of them could be rescripted. Emergency rooms have a process for managing patients' arrival and treatment, for example, but patients were flooding in too rapidly as the pandemic spread. Hospitals replaced a multistep indoor admission process with screening patients' temperatures outside the ER building so that people with high fevers would be prioritized.

Doctors and nurses who weren't treating Covid-19 patients swiftly settled into new routines in response to the need for social distancing: They conferred with patients over the phone or by computer rather than in person.

Heuristics. As the crisis intensified, routines needed more than minor adjustments. Doctors and nurses began to rely on heuristics to speed up activities and processes. If it was impossible to treat everyone needing care, they would make a quick triage decision: Admit the patient (if a bed was available); send him or her to another hospital (if one wasn't); or send the patient home (if that person's symptoms were not life-threatening).

At a later stage, caregivers had to make painful choices about which patients would get time on limited ventilators. Hospitals developed heuristics for making those decisions; generally they were based on which patients had the greatest likelihood of surviving (such as younger people).

Improvisation. Over time the resource gap grew larger. Health care workers didn't have enough N95 masks and protective gowns, nor did they have enough beds in their intensive care units. These problems prompted several improvisations. Some nurses and doctors began to reuse masks (aware of the increased risks to themselves). Hospitals repurposed entire floors to expand ICU areas or to treat the more-stable Covid-19 patients, often making the change in just a few days. New York City built a makeshift tent hospital in Central Park and transformed the Javits Convention Center into a field hospital in anticipation of a surge in patients.

The most extreme situations involved the shortage of ventilators. Doctors and nurses, trained to do everything medically possible to save lives, had to adjust to a reality in which that simply wasn't possible. They turned to risky improvisations, like sharing ventilators between two patients.

By the summer, health care workers had developed a better understanding of how to treat Covid-19. The pandemic still presented massive challenges (like the development of a vaccine), but the early-stage experimentation with protocols meant that hands-on care for patients had significantly improved.

In the final, "death zone" stage of the climb, which took five days, the climbers were in a first-ever situation that demanded rapid responses. There were few rehearsed routines or simple rules to fall back on. None of them had ever been at such a high altitude before, and they didn't know how their bodies would react. In situations like this, climbers often improvise. The three climbers began the final ascent carrying ropes because the Hillary Step, a steep, rocky section just before the summit, required them to climb tied together. However, the ropes became too much of a burden for their tired bodies and slowed down one climber. They decided on the spot to simply drop the ropes and continue separately. When the context is uncertain and unforgiving, as it was here, there's no way to know whether you're making the right call. By dropping the ropes, the climbers increased their risk of a bad fall—but also the likelihood that they'd finish the climb. Fortunately, the move paid off when all three reached the summit safely.

WHAT WE LEARNED

When we analyzed our findings from Juan's extensive notes and from videos, diaries, letters, and interviews with the other climbers, we came away with the following observations:

Heuristics and improvisations are triggered by different types of challenges. We saw two major reasons for the adoption of new tools. One was speed: a sharp increase in the rate at which the team had to make decisions. That was the case on the wall, when the team transferred decision-making rights from the expedition leader to the on-site leader. Here, and in other cases where things were happening too quickly, heuristics seemed to offer the best response. They helped the climbers adjust to the faster pace, but they didn't change the underlying principles that guided the expedition. (There was still a designated decision-maker during the route openings, for example, and a rule governing how many supplies to carry in specific circumstances.)

The second trigger was complex, unfamiliar contexts, such as when the climbers experienced the death zone

> Organizations that deal with fast-evolving situations—think SWAT teams—know that it pays to practice and prepare for the unexpected.

without knowing how their bodies would react. In those cases the team was more likely to improvise, because some challenges required out-of-the-box, ad hoc solutions that sharply departed from what the team had imagined would take place. Sometimes they were in response to an opportunity (a third climber seemed fit enough to summit). At other times they were in response to a problem (the ropes were too heavy, so they were abandoned). (See the exhibit "When to Try Each Approach.")

The tools are interdependent and dynamic. The lines between routines, simple rules, and improvisation aren't always clear, and one approach can morph into another. For example, under normal circumstances, specific members of a climbing team are assigned to check and maintain the ropes daily. However, the extreme conditions of the Kangshung Face prompted an improvisation: One climber, when descending after a 12-hour climb, stopped for almost an hour to repair the ropes in a section of sharp rocks when he became very concerned about safety. From the base camp the other climbers could see that he had stopped but didn't know why. That night they discussed his improvisation and concluded that the extra safety was worth more than the cost in time spent. They replaced their rope maintenance routines with a simple rule: *If you see a damaged rope, you have to fix it right away.*

In other instances a newly introduced heuristic might prompt an improvisation. As noted earlier, the team developed heuristics around how much to carry and where to sleep, in response to resource constraints. Those rules increased efficiency and maximized speed, but they were also risky. That became apparent late in the climb, when one of a pair of support climbers, who should have gone back to Camp Two for the night, began exhibiting symptoms of hypothermia. The team had to improvise: Both support climbers spent the night in Camp Three, without sleeping bags and oxygen, because the team hadn't brought any extra supplies. (In accordance with a rule established earlier, those were reserved for the climbers who would continue to the summit.) This improvisation worked out, fortunately: The summit team was able to continue its ascent, and the compromised support climber went down to Camp Two safely the next day.

USING THE TOOL KIT

The Covid-19 crisis and the economic havoc it has wrought are harbingers of the extraordinary challenges we're all going to face in coming years. (For a look at health care professionals' adoption of the three approaches during the pandemic, see the sidebar "How Hospitals Used Routines, Simple Rules, and Improvisation to Deal with Covid-19.") Climate change, massive migration flows, and technological advances will all dramatically reshape the social and economic landscape in ways we can't fully anticipate. They will disrupt industries, economies, and nations.

But organizations aren't helpless. They can prepare themselves to cope with novel and uncertain situations, be they existential crises, like a pandemic, or more-familiar situations, like an industry shake-up. By actively training the organization to alter the combination of routines, heuristics, and improvisation on the fly to match the changing requirements of different possible scenarios, leaders can build resilience throughout their organizations. Organizations that regularly deal with fast-evolving situations—think SWAT teams and military commandos—know that it pays to practice and prepare for the unexpected while you have the luxury of time and resources, instead of trying to learn how to adapt in the middle of a storm.

Most organizations are already good at working with routines. Indeed, managers have been trained to focus on efficiency, so they're naturally inclined to codify best practices into organizational routines. Therefore management should focus on helping people add heuristics and improvisations to their tool kits. What we observed in the Everest expedition can serve as a helpful template. Here are some suggestions for getting started:

Analyze which tools you use to get different chunks of work done. The point isn't to do fine-grained process mapping—it's to think at a high level about how you handle work. Such an analysis isn't necessarily straightforward, though, because most work gets broken down into parts that may call for different tools. If you do A/B testing on new product features, for example, you almost certainly have a rigorous organizational routine in place—whereas decisions about what to test may be more open-ended and improvisational. Do your best to build a picture of which approaches are used where, and whether your organization favors a particular one. Then think about whether it's the best choice for most of those tasks. You'll manage a crisis better if you've analyzed and discussed your processes—and done at least some reinvention—before you're in the thick of things.

Question the assumptions behind your routines. Every routine and process is built on a significant number of assumptions. Spend some time figuring out what they are, at least for your key routines, and then think about how you'd operate if they didn't hold. These questions will help:

- What types of decisions do you assume must be handled by high-level managers? How do you envision those decisions being made in a crisis?
- Do you assume that your existing processes have been revised and perfected over time—that they're optimal? Will they hold up in times of duress?
- Where in the flow of work do problems consistently arise? Is there an argument for reshaping that segment or allocating more resources to it? What would happen if you suddenly had to get that chunk of work done much faster?
- Do you assume that organizational resources are allocated well? Would you reapportion them if you suddenly had to respond to a major disruption?

Practice doing more with less. We can't think of any actual crisis that didn't involve resource scarcity of some kind. The Everest climb certainly did. So it makes sense to get used to working lean. Managers can challenge a unit by asking it to achieve an ambitious goal with significantly fewer resources than normal, for example. Or a team can brainstorm about how it would respond if a key resource suddenly became scarce.

Deepen your knowledge of how your work fits into the whole. Organizations tend to ask people to specialize, sticking to narrow tasks or activities. It's efficient, and it fits well with scripted organizational routines. In uncertain times, though, deeper knowledge of how other areas function (perhaps gained through cross-training) makes a group more resilient. Team members develop a better idea of how their work depends on others' work, and vice versa. As a result, when a routine is changed, the larger group's work is less likely to be disrupted.

Invest in building expertise. New heuristics and improvisations may appear spontaneous, but in reality they work best when they rest on a foundation of knowledge and training. The mountain climbers in our study trained much harder than those on other expeditions we have data on, and they did it in the belief that they'd be better prepared to adjust when they needed to.

Identify your priorities. If a crisis is unfolding, red lights and alarms go off everywhere, and managerial attention becomes a very scarce resource. In such situations leaders need to hyperfocus on the metrics that are central to moving the organization through the turmoil. By doing so, they can help everyone tackle the most-pressing problems and concentrate on the activities that are essential to avoiding a collapse; everything else will simply have to wait. This often requires tough trade-offs. The metrics won't be the same in every situation, however, so it's useful to imagine a variety of scenarios and think through what they might specifically require.

Learn to give up control. In a crisis, solutions are not obvious and seldom come from a top-down approach. All organizational brains are needed to solve problems on the spot. If those brains don't feel empowered to act immediately, a problem can quickly get worse. This goes beyond the traditional advice about empowerment, which says that people should be given limited freedom to make decisions in their area. Organizations that survive dangerous times have developed the ability to swiftly delegate authority and decision-making to people with expertise on the front lines.

Here's the beauty of analyzing your routines and practicing new ways to solve problems in anticipation of a crisis: Your organization will become more adept at heuristics and improvisation, which will make it more resilient and resourceful—and better able to cope when uncertainty does reach alarming levels.

HBR Reprint R2006B

FERNANDO F. SUAREZ *is the Jean C. Tempel Professor of Entrepreneurship and Innovation at the D'Amore-McKim School of Business at Northeastern University.* **JUAN S. MONTES** *is an associate professor of the practice at the Carroll School of Management at Boston College.*

ABOUT THE RESEARCH

This article is based on an ethnographic study of a Mount Everest ascent via one of the mountain's most-technical and least-known routes, the Kangshung Face. We had direct access to the details of the expedition because one of the authors was on it and took extensive notes throughout. We also had access to the diaries of three other expedition members, 12 hours of video footage, 1,250 photographs, and transcriptions of interviews with expedition members. In addition, we reviewed 52 letters written by the members before, during, and after the ascent, together with the planning documents for the trip and the rationale for the team selection.

Gregory Reid/Gallery Stock

Copyright 2020 Harvard Business Publishing. All Rights Reserved. Additional restrictions may apply including the use of this content as assigned course material. Please consult your institution's librarian about any restrictions that might apply under the license with your institution. For more information and teaching resources from Harvard Business Publishing including Harvard Business School Cases, eLearning products, and business simulations please visit hbsp.harvard.edu.