THE JOURNAL OF PEOPLE + STRATEGY

Prepare for Surprises

Tuesday, February 23, 2021

PREDICTING AND PLANNING FOR THE FUTURE IN A COMPLEX WORLD REQUIRES LEADERS TO EMBRACE NEW SKILLS AROUND FLEXIBILITY, OPEN-MINDEDNESS, RESPONSIVENESS AND CURIOSITY.

By Margaret Heffernan, University of Bath

*This article was originally published in print and **online** in the Winter 2021 issue of the Journal of HR People + Strategy.*

When it comes to the future, the only thing we can be sure of is surprises. Experts in forecasting now say that the window for accurate prediction is no more than 400 days. That applies if you are open-minded and rigorous in reviewing a broad range of information sources, apply probabilities to your conclusions and routinely adjust these in the light of new information. If that isn't you, the horizon is more like 150 days.

Why? Because we have moved from a complicated world to a complex one. The two aren't the same—and complexity isn't just complicated on steroids. Complicated environments are linear, follow rules and are predictable; like an assembly line, they can be measured planned, managed and controlled. They're

maximized by routine and efficiency, and similar problems can be solved in similar ways.

But the advent of globalization, coupled with pervasive communications, has made much of life complex: nonlinear and fluid, where there may be patterns, but they don't repeat predictably, and very small effects may produce disproportionate impacts. At first glance, problems may look simple, but the relationship between cause and effect can be ambiguous.

What this shift means is that, while we can still be generally certain about many things, much remains specifically ambiguous. We know climate change is real, but we can't predict when or where wildfires will break out or when extreme weather events will destroy which harvests. The Bank of England acknowledges that there will be future banking busts, but cannot say when or why. Their executives aren't stupid, just candid about navigating daily tsunamis of data and interactions, of which some are meaningful, much is obscure and quite a lot is pointless. The Bank recognizes that much of the system—Trump's tweets, Chinese agriculture, the outbreak of a new virus—lies beyond prediction or influence.

Apple's iPhone may have been "designed in California" but making it depends on raw materials and suppliers from over 20 different countries and many parts of the United States. Such complex supply chains are designed to reduce costs and take advantage of labor specialisms, employment conditions, currency fluctuations and tax breaks. But they also expose Apple (and similar phone manufacturers) to natural disasters, labor disputes, economic volatility, social turmoil, religious strife, trade wars and political discontent—all factors over which the company has no control, little influence and poor foresight.

Similarly, we can no longer observe shifts in social mores-—MeToo, Black Lives Matter or the rejection of former staples like plastic straws and bags—without recognizing that these trends too jump national boundaries in an instant. The causes (sexual harassment, racism, environmental degradation) aren't new but their sudden combustion leaves many organizations blindsided. We're so dazzled by the complex systems we've built that we forget, or prefer to deny, that contingencies have multiplied, fragility has proliferated and accurate prediction has become harder.

Scientific Management

This is not the world from which scientific management hailed. Most business leaders grew up in a world obsessed with efficiency. Measure everything that matters and then find ways to reduce margins, accelerate productivity (mechanical or human) and scale at speed—that mindset has dominated organizational life ever since the Industrial Revolution. That business schools mostly grew out of engineering schools only emphasized the degree to which management was framed as the smooth running of controllable, measurable machines. The same approach came to dominate the way that people were managed too. Their every move—key stroke, journey, delivery—managed and analyzed to reduce margins and error. New technology has made it even easier to control people at scale.

But while metrics and efficiency bestow a reassuring sense of mastery and control, they deliver most value in environments that are highly predictable. Once uncertainty enters the picture, efficiency becomes dangerous because it erodes margins for responsiveness and change. Take the supermarket executives who, in a margin-intense industry, hoped to reduce staff costs by eliminating supervisors and replacing them with algorithmic task allocation. They embraced their digital transformation with a passion: out went the store teams—looking after vegetables, meat, bakery—and, instead of working together, each employee clocked in, was assigned a task, did it, came back for more. Fewer managers, fewer people, less down time. This was scientific management on steroids: standardizing and allocating work. Super efficient.

But not quite. Because the task allocator couldn't know when a customer dropped a box of eggs, could not anticipate a kid knocking over a display, or when the local high school told everyone to bring in coconuts the next day. Efficiency works well when you can predict exactly what you'll need—but when you can't?

In a complex environment, the difficulty of prediction exposes even an apparently simple business like making plastic straws, when a change of social attitudes turned its staple product into a reject overnight. Releasing movies used to run on a predictable schedule—but not when movie houses are shut or a shift in public sentiment turns former superstars into pariahs. Planning for such events is impossible—no company planned for a pandemic and even governments that could have did not. There is simply too much uncertainty built into the world for the traditional management processes—forecast, plan, execute—to deliver the mastery or confidence they once promised.

In an unpredictable world, efficiency becomes dangerous because it erodes an organization's capacity for spontaneous creativity, the capacity to respond and adapt. A workforce adept at following predictive orders learns not to think. The manager eager to improve those instructions does too. In complex systems, where uncertainty is ineradicable, scientific management looks neither scientific nor manageable and new approaches to leadership are required.

Explore Through Experiments

One feature of complex systems is that it is impossible to see the whole system in a single glance, diagram or map. But they can be explored through experiments, which typically focus on points of pain.

Experiments aren't the purview only of start-ups or research and development departments. At the Bank of England, Chief Data Officer Oliver Burrows faced a dilemma common to most leaders today: increasing workload with no commensurate increase in resources. He could have followed tradition and taken his leadership team off for a strategy weekend, but instead decided to invite ideas for experiments from his entire workforce. Suggestions for improving productivity came flooding in; many were tried and not all succeeded. A recommendation that his leadership team meeting be open to all revealed that it was neither thrilling nor secretive; attendance fell fast. But revamping a stale annual appraisal process made an immediate impact, with people feeling seen, understood and valued. A new way of coding data, proposed by a few young engineers, yielded a 10x improvement. It was, Burrows said, something that no one in the top team would have come up with, because they were too far from the action.

Two important insights emerged from Burrows's experiments. The first was that even in an old, traditional institution, he found he had a lot of freedom that neither he nor his peers were accustomed to using; they'd assumed constraint. (This is very common in established hierarchies.) The second was that there was more good strategic thinking across the whole of the organization than he'd previously seen. Strategy was not a domain restricted to senior executives.

That final insight shows a strength that derives from what has come to be known as open strategy: involving the whole of an organization in thinking about the future. Open **strategy** has roots in hackathons (when software engineers volunteer to work together on specific problems) and in crowdsourcing (when anyone can contribute to a project.) As practiced by companies large and small (Virgin, HSBC, Phillips, German Premium Cola), open strategy has several different flavors from the simplest crowdsourcing of ideas (even through social media) to significant and sustained participation. But in all cases, inviting participation to think about the future addresses charges against conventional strategic thinking—that it is elitist and secretive.[1]

Being deliberatively inclusive and transparent delivers multiple benefits. In a world where all factors can't be seen, gathering multiple perspectives creates the opportunity to see far more that matters. In complex environments, collective insight beats specialist focus. Moreover, participation spreads knowledge and understanding more broadly; transformation is part of the process. The emerging strategy is less in need of being explained and sold, because those who must enact it helped to create it. In the light of the extremely high failure rate of change programs, this is a big and significant win.

Scenario Planning

Similarly, scenario planning, as pioneered by Pierre Wack at Shell in the 1970s, was found to develop greater capacity for argument, debate and critical thinking. Wack believed that placing planning within finance was a fundamental error, because it meant only quantifiable data could ever be considered—but in complex environments, not all data that matters is financial. Uncertainty, in particular, is specifically distinct from risk because it can't be quantified. He regarded computer modelling as the enemy of thought; once quantified, models become too rigid, their makers so wedded to them as to become blind to disconfirming data.[2] Numbers acquire more authority than they justify. So rigorous planning processes must incorporate the uncertain and the ambiguous.

What Wack devised at Shell required crafting multiple, coherent narratives about what the world might look like. The essence of the work is exploration, open-mindedness and debate. His scenario planning demanded a diverse range of people, who are open-minded, with deep intellectual curiosity, expertise and a capacity to think freely.

As Global Head of Intellectual Property, Michael Koch ran scenario planning exercises within the global agrichemicals business Syngenta. The most productive contributors to scenarios, he found, were young people who played a lot of computer games. These are forms of simulation where play is how to find out what happens next. Avid game players don't just get used to trying out different strategies—doing so is their idea of fun. They brought to the exercise a mindset that is open, fluid and optimistic.

But Koch found that his more conventional senior colleagues couldn't cope. They needed, he said, "certainty like an addiction and they are so afraid of being wrong that they have lost the capacity to think freely." Koch eventually left Syngenta, frustrated that the company's senior leaders could not let go of a planning mindset. If you can't even imagine a different future, he wondered, how on earth are you going to be able to make it?

Preparedness and Responsiveness

Planning and efficiency have so dominated management thinking over the last 100 years that it is difficult for leaders to grasp how dangerous this can be in an age of uncertainty. Cost-cutting, trimming schedules and stockpiles makes sense if you can predict exactly what is going to happen in the future—but where you can't, it leaves organizations without the margins and capacity to respond to the unexpected. Nowhere is that more vivid than in the history of epidemics. These are icons of uncertainty: we know that they will happen, but we cannot predict when they will break out, where or what the pathogen will be. There is no profile of an epidemic or, as epidemiologists like to joke, if you've seen one epidemic, you've seen…one epidemic. But that doesn't mean you're left helpless.

The Coalition for Epidemic Preparedness (CEPI) was formed in 2017 when it became clear that governments were blind to the persistent risk of pandemics. CEPI was designed to confront a great question: when an epidemic breaks out, what will we wish we had been doing now? That was its working definition of preparedness, and the answer had three parts. First, because vaccines are the holy grail in epidemics, CEPI had to kickstart vaccine developments ahead of need. It chose to work on diseases posing the biggest risk and where a successful vaccine is most likely: Lassa, Nipah, Rift Valley fever, chikungunya and beta corona viruses. They can't predict which vaccines will work or which diseases will erupt, so they may end up with vaccines they never use. It's not efficient, but it's robust because it provides more options and doesn't depend on a single technological approach.

CEPI was an early investor in Moderna, which has now produced one of the first successful COVID-19 vaccines. That's the advantage of starting before you need to.

Epidemic responsiveness also requires networks of people around the world who know and trust each other. Fostering those take time too, which is in short supply when epidemics break out. So CEPI started early, building alliances of trust and generosity. The organization also began negotiating with vaccine

manufacturers, knowing that when the time came speed would be critical. Some of these relationships might never be useful. That's inefficient—a waste of time and effort perhaps—but investment today is the only way to guarantee speed tomorrow.

The consequence of all this work has been that we did not go into the COVID-19 pandemic empty-handed. Had we started earlier, had more governments and corporations accepted the need to prepare, we would of course have been better placed, with better knowledge, networks, trust and capacity to respond. The lesson here for organizations of any kind is that waiting until perfect prediction is possible may feel efficient, but it hugely amplifies risk to a point where remediation becomes impossible. This is, of course, the danger of ignoring climate change, that by the time everyone agrees that the crisis is real, it could be too late to do enough.

Convening and Synthesizing

The COVID-19 pandemic ruthlessly revealed organizations that were prepared for uncertainty, and those that were not. Successful responses to the crisis were quick and much work shifted from the center to smaller, often ad hoc, teams. Devolving decision-making to the frontline and increasing localization forced leaders to trust their people to know what to do. Few were disappointed. Where abandoning scientific management once felt like a risk, now it's an obvious, responsive asset.

Operating in this new world requires a different attitude and skillset. The most energized businesses have been alert to how much in the world had changed. Instead of reverting to plan, they have assessed their assets and resources and asked what will make them most relevant and valuable now. They've explored widely with their workforce, customers and partners the opportunities now opening up before them. They've quickly cancelled what now feels obsolete and accelerated what has become urgent. The creativity in this re-thinking has been fearless. Their more conservative counterparts, dreaming of normality, feel orderly but slow, sad and nostalgic. After a century of management thinking that prioritized planning and efficiency, it is a challenge for leaders everywhere to accustom themselves to an environment where much is uncertain and ambiguous, and where forecasts are mere probabilities.

A mindset fit for the future accepts that much is unknowable, that forecasts cannot capture the whole story. The farsighted organization is eternally vigilant, with everyone alert to weak signals and small changes which may be significant. It is necessarily diverse, not out of political correctness, but because it's understood that multiple perspectives enrich understanding and reduce willful blindness. That in turn requires a tolerance for debate and experimentation, an environment in which being wrong is not a career killer. Rather the opposite: those that can't see further, and imagine more broadly, may find themselves stuck in jobs that are easy to automate. This has huge repercussions for how we hire and develop people who are keen to learn, fast to adapt and eager for change.

Those who rise to the leadership challenge will be outstanding convenors, better chosen for their skepticism and curiosity than their confidence. They may be more similar to artists than engineers. Collecting voices, structuring exploration, keen listening and synthesizing success and failure will be the focus of their work. They need to be excellent interrogators of the ecosystems in which they reside, aware of where they fit and the impact of their decisions on others. Being able to reconcile opposites—efficiency and robustness, complicated and complex—is a hallmark of their adaptive minds. Successful leaders will have to hold the tension between urgency and integrity, to stiffen resolve for what is confusing, frustrating and frightening and to resist simplifying what is innately complex. They cannot be expected to deliver reliable perfection, but they can and should be held to account for decisions that can be explained and understood.

COVID-19 has given everyone an intense experience of uncertainty and nobody has enjoyed it. But that need not mean that we are left helpless or hopeless. We find ourselves today in a place demanding more of our creativity, ingenuity and humanity than ever before. Many leaders are rising to that challenge today. More will follow.

Dr. Margaret Heffernan is Professor of Practice at the University of Bath and Lead Faculty for the Forward Institute's Responsible **Leadership Program**. She is a Trustee of the Centre for Effective Dispute Resolution and author of *Uncharted: How to Navigate the Future*. She can be reached through **www.mheffernan.com**.

References

1 Seidl, David and Whittington, Richard, "Open Strategy: Dimensions, Dilemmas, Dynamics," *Long Term Planning*, Volume 50, Issue 3, June 2017, pp. 298 – 309.

2 The Nobel Prize-winning economist Paul Krugman, widely praised for the elegance of his economic models, once wondered whether what got left out of them mattered more than what was left in.