

## How to Assess Uncertainty in an Unpredictable World

by Stephen Bungay, Rebecca Homkes and Anthony Freeling

In the 1990s, Pfizer began work on the compound torcetrapib to treat heart disease. In 2001, despite evidence that torcetrapib raised blood pressure, CEO Hank McKinnell declared it to be ‘an enormous opportunity.’ In 2005, despite worrying levels of patient mortality, Pfizer began building manufacturing facilities. In December 2006, the new CEO Geoff Kindler announced that torcetrapib would be ‘one of the most important compounds of our generation.’ Three days later, Pfizer terminated clinical trials on the drug after spending an unprecedented \$800 million. The company’s market value fell by \$21 billion overnight.<sup>i</sup>

Although the scale of Pfizer’s eventual losses is unusual, the pattern of decision-making is not. Experienced executives swept aside uncertainty, confidently predicted a positive outcome, ignored mounting evidence their predictions were wrong, and failed to cut losses until they had no choice.

Strategic decisions are always made in uncertainty. And in today’s volatile, unpredictable, and complex world, making good decisions is harder than ever. Pfizer’s pattern of bold predictions and timid decisions is a common one. But why?

### Two Meanings of Uncertainty

One meaning of uncertainty is a state of reality. The future is the totality of events that may or may not occur, which makes it uncertain. This is real uncertainty, which makes it difficult to make good predictions. The other meaning of uncertainty is a state of mind. Not knowing what will happen causes anxiety. This is psychological uncertainty, which makes it difficult to make good decisions.

The combination of real and psychological uncertainty creates the double jeopardy of delusion and paralysis. If we ignore real uncertainty and try to predict the future, we plunge forward with our delusions until the business hits the rocks. But if we bow to psychological uncertainty and anxiously wait for clarity to emerge—which it never does—we become paralyzed by inaction and the business drifts and sinks.

Studies consistently show that executives tend to be overconfident in their ability to predict the future, more so than the population as a whole.<sup>ii</sup> In fact, they often do little more than guess, and then feel the need to stick to their decision in order to justify past investments and avoid being wrong—much as Pfizer’s leadership did. Organizations and stakeholders reinforce this dynamic by favouring the status quo and preferring management teams that ‘deliver on their promises.’<sup>iii</sup>

There are more options than delusion or paralysis. Navigating through uncertainty to open up those options requires two disciplines.

The first discipline is to overcome the temptation to make predictions. Instead, we should acknowledge the reality of uncertainty and build our strategy around it—not simply adjust for it. Terry Smith, sometimes called the ‘English Warren Buffett,’ believes investing based on market predictions is a fool’s errand.<sup>iv</sup> He uses what he calls ‘emotional discipline’ to avoid falling into this trap.<sup>v</sup>

The second discipline is to overcome the fear of making decisions when you don’t know everything you would like to know. Instead, we need to recognize that uncertainty is not inherently good or bad. The future is simply the totality of events that have not yet been fully determined. Those events could present threats or opportunities, depending to no small extent on how we react to them.

Some of the greatest business successes have come from capitalizing on unforeseen events.

In the 1960s, IKEA was primarily a mail-order furniture company based in Sweden. It had one retail store and in 1965 opened a second store in the suburbs of Stockholm, where low real estate costs meant that IKEA could take over an unusually large space. By chance, the Swedish government announced plans to raise sales taxes the next week. As a result, on its opening day the store was overwhelmed by 18,000 customers. Short of staff, the desperate store manager told his people to man the tills and open the warehouse so customers could pick up the goods themselves.

Later, the manager apologized for his poor planning and assured IKEA’s founder, Ingvar Kamprad, that it would not happen again. Kamprad became thoughtful and asked the manager once more to confirm that customers had indeed been willing to pick up their goods from the warehouse and take them to the tills themselves. ‘Yes’, came the nervous reply. Kamprad then announced that from then on this would be the norm for all IKEA stores, present and future. The problem was an opportunity in disguise. The unexpected crush on opening day drove a pivotal change to the company’s business model, which reduced staff costs and became a key element in IKEA’s future success. What set Kamprad apart was his attitude toward chance and uncertainty.

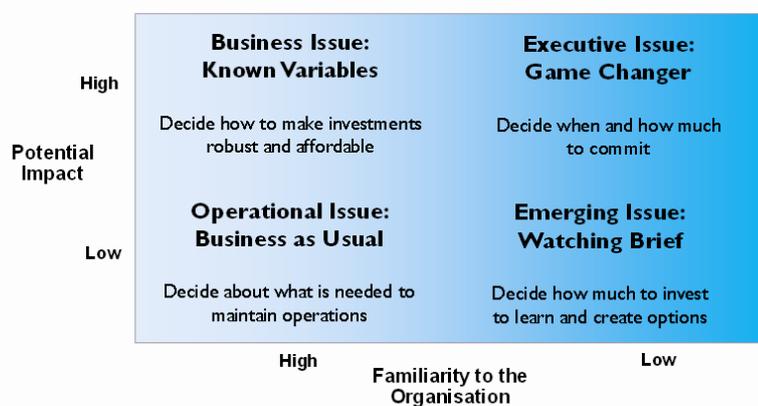
To make better strategic decisions when confronting an unpredictable future, executive teams first need to understand the type of uncertainty they face. Different types of uncertainty require different approaches.

### The Uncertainty Matrix

There is a consensus among writers about this topic that there is a need for managers to first diagnose the level of uncertainty in the environment before deciding what to do. It should be categorized as simple, complicated, complex or chaotic, or rated according to its level of unpredictability and malleability. However, managers find this hard to do—and they usually get it wrong.<sup>vi</sup>

A simpler and more pragmatic approach is to categorize uncertainty in terms of variables that management teams are able to assess: its degree of familiarity and potential impact on the business. These two variables create an uncertainty matrix (see Exhibit). Plotting uncertainties, their priority and the right approach is not an exact science, but a matter of judgement and it helps if that judgement is a collective one.

**Assessing uncertainties: a matrix of impact and familiarity**



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Exhibit 1

To evaluate familiarity, the executive team can consider a series of questions:

- Can our company's current business model deal with the uncertainty?
- If not, has anything like this happened before?
- If so, which aspects of the current situation are different?
- Is the rate of change linear or exponential?
- Can we identify and control the variables driving change and how they interact?

People tend to overestimate their own levels of certainty and overemphasize the familiar aspects of a situation. When in doubt, move to the right.

To evaluate the potential impact of uncertainty on the business, have the team answer questions such as these:

- Could this challenge our basic beliefs about how our business works?
- Will we get into trouble if we continue down our current path?
- How soon do we need to decide what to do?
- How much will we need to invest?
- If new technology is involved, how could it affect us in the hands of a competitor?

Be sure to clearly distinguish what you know from what you don't know. It's easy to confuse assumptions with knowledge. It's also important to note that trends in technology and society typically take longer than expected to reach a tipping point—and then have a greater impact more quickly than expected.

Answering these questions will result in a prioritized portfolio of potential decisions and a clearer understanding of how to approach each one.

The uncertainties that populate the lower left quadrant are familiar and manageable. That is, they're high on the familiarity axis and low on potential impact. For instance, businesses routinely make budgets and sales forecasts without knowing what the next year will bring. If they are wrong it is annoying, but the consequences are rarely serious.

The upper left quadrant contains uncertainties that require specific experience to master, and are therefore domain specific. Many companies have built up skills and experience enabling them to make good decisions about high-impact uncertainties that would paralyze most of us. For instance, oil companies must make huge investments in drilling exploration wells, based on only partial knowledge. Established processes guide their decision-making and work reasonably well.

Such examples show that despite the weaknesses of human psychology noted above, the human brain also has a decisive strength—the ability to learn. If we have sufficient exposure to initially intractable problems that we must deal with in order to have a business, we can collectively learn to handle them well.

The problem comes on the right-hand side, when the phenomena we face are unfamiliar and our experience may be as much of a trap as a guide. Here we need to learn as fast as possible. Faced with the unfamiliar, the key is not prediction, or making a single right call, but relative rate of learning.

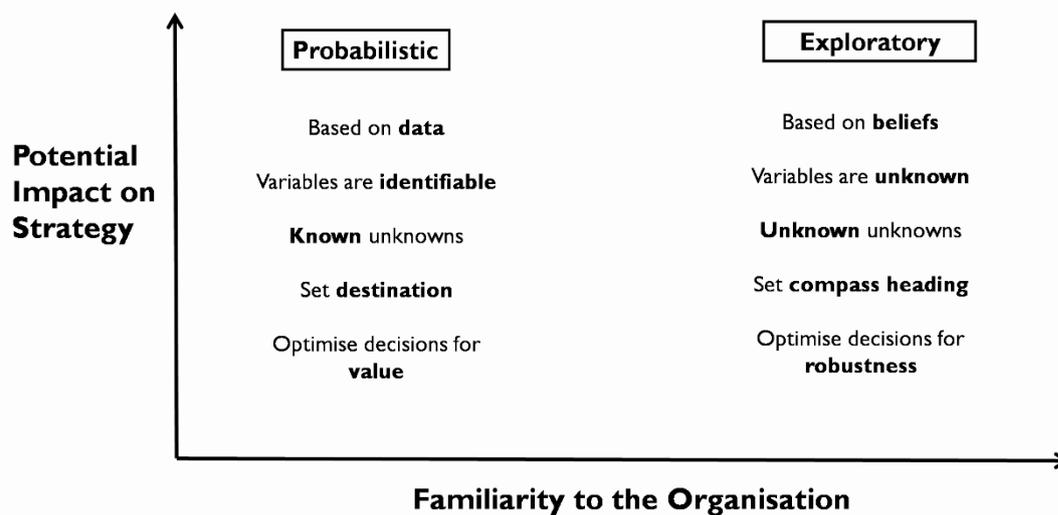
Unfamiliar uncertainties with high potential impact must be managed explicitly as part of the executive agenda. The others can be delegated, tracked, watch-listed, or even ignored, given resource limitations. Think about what items are already budgeted for, and then move emerging issues on to the executive agenda before major resource allocation decisions need to be made.

The degree of impact is often a function of time, as some uncertainties will move from low to high on the matrix over months and years. A key decision is when to move the item onto the executive agenda. When artificial intelligence (AI) was first explored in the 1950s, optimistic forecasts predicted its huge imminent impact—another bold forecast that was wrong.<sup>vii</sup> In reality, tracking it made little sense back then. But in the last decade, even though its impact is still uncertain, AI has moved quite quickly to the forefront of people’s minds and today there is scarcely any major business not investing in this area.

Exhibit 2 summarizes how different types of uncertainty require different approaches.

Exhibit 1

### Different types of uncertainty imply different approaches



Relatively familiar situations tend to have data that can be analyzed, known variables, and a relatively clear path forward. These types of uncertainties lend themselves to a probabilistic approach, one that combines planning—drawing on probability theory—and a variety of analytical methodologies.

In contrast, unfamiliar unknowns such as digital disruption, Brexit or AI haven’t been encountered before. Some phenomena are sudden and unexpected. In other cases, the unknowns are anticipated but the timing and extent of the implications are unclear. These unfamiliar situations require an exploratory approach, much like navigation in uncharted waters. Like the captain of a ship in the age of sail, business leaders must take an approximate fix on their initial position, set a general compass heading, and post lookouts to avoid hazards that could sink the boat or run it aground.

As a company’s knowledge, skills, and familiarity grow, uncertainties that were on the right of the matrix tend to move to the left. Others will fade away over time.

Keep in mind that most businesses have areas of stability, and many broad trends have a predictable trajectory. Use these relatively known factors as a platform from which to view what is truly unpredictable.

The exploratory approach is the basis of what we call directional strategy. Directional strategy is a way of making clear decisions without making rash predictions when faced with radical uncertainty. It involves overcoming both hubris and fear to achieve decisiveness and adaptability. It generates knowledge of what is initially unknown, and so creates learning. The winners will be those who maximize their relative rate of learning.

## The Authors

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<sup>i</sup> 'Behind Pfizer's Failure', *Forbes*, 4 December 2006; 'Pfizer Ends Studies on Drug for Heart Disease', *The New York Times*, 3 December 2006.

<sup>ii</sup> See Daniel Kahneman, *Thinking, Fast and Slow*, Penguin Books 2011, pp. 261–263. Kahneman interprets this systematic over-confidence as a manifestation of the 'availability bias', a tendency to believe that 'what you see is all there is' or WYSIATI (pp. 85–88 and 129–136). There is some evidence that élites are less prone to the loss-aversion bias than the population as a whole, but more prone to over-confidence. See Emilie M. Hafner-Burton, D. Alex Hughes and David G. Victor, 'The Cognitive Revolution and the Political Psychology of Elite Decision Making', *Perspectives on Politics*, CUP, Vol 11 No 2, June 2013, pp. 368–386.

<sup>iii</sup> Kahneman and Lovallo, op.cit., pp. 17–24. This is particularly true in businesses because people's knowledge that their choices will be reviewed by others increases 'the asymmetry between gains and losses in the decision maker's utilities' (p. 22).

<sup>iv</sup> *The Guardian*, 8 September 2018 and *The Times*, 28 April 2017. In the first seven years since Smith founded it in 2011, his equity fund Fundsmith grew in value by 309%. Over the same period, Berkshire Hathaway grew in value by 154%.

<sup>v</sup> The term is used in all Fundsmith's bi-annual Investment Statements.

<sup>vi</sup> Martin Reeves, Knut Haanaes and Janmejaya Sinha, *Your Strategy Needs a Strategy*, HBR Press 2015, pp. 93 & 111.

<sup>vii</sup> Daniel Crevier, *The Tumultuous Search for Artificial Intelligence*, New York 1993, p. 109.